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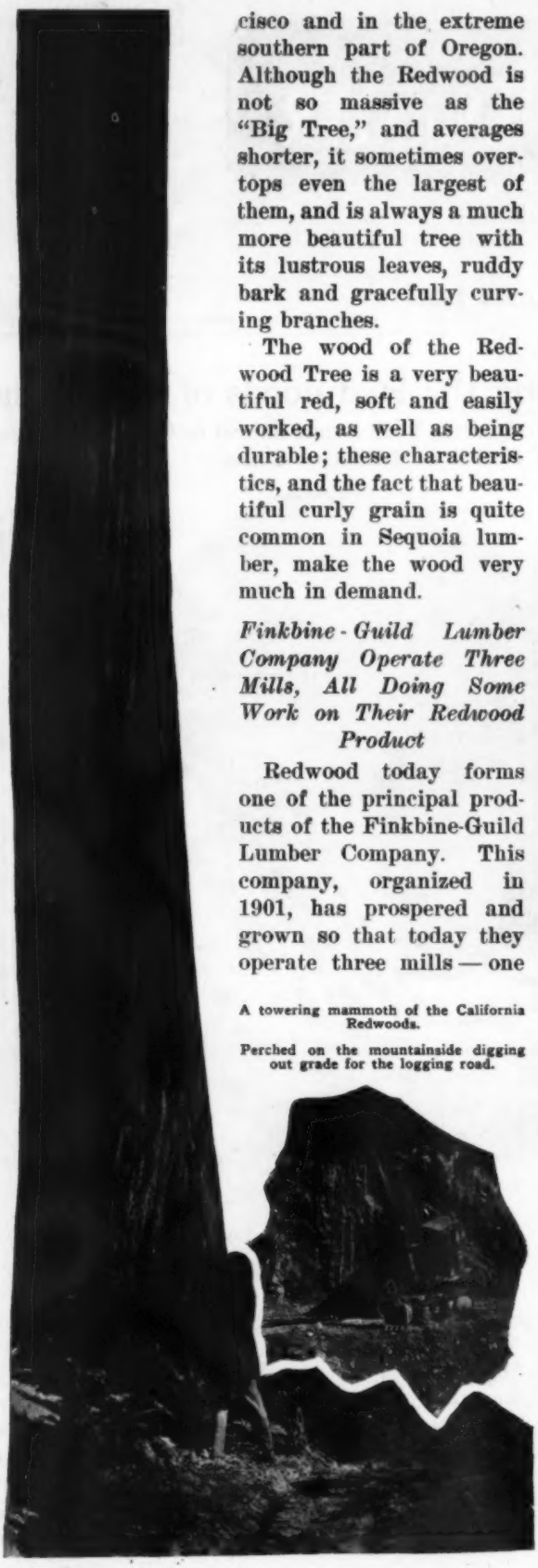
Grading a Logging Road Among the Redwoods of California

The Finkbine-Guild Lumber Company Use a Three-Quarter-Yard Diesel Shovel to Grade a Logging Railroad Into Their Stand of Timber in Mendocino County

A Heavy Cut on the Mountainside Winding Along Near the Creek Bottom.

VYING with the Eucalyptus Trees of Australia, with the Dragon Tree of the Canary Islands, and with the Baobab Tree of Africa, for the distinction of being the oldest living things upon the face of the earth, the Giant Sequoia Trees of California are the oldest growing plants in the Western Hemisphere. Throwing their topmost branches as high as three hundred and fifty feet in the air, and with the bases of their trunks reaching the tremendous circumference of almost a hundred feet, many of these huge giants of the forest have shown an age of over four thousand years, and some are undoubtedly over five thousand years old.

The Sequoia family of trees forms a characteristic feature of the flora of California. Along the western slopes of the Sierra Nevadas are found the huge Sequoia gigantea, and *only* on these slopes does the tree thrive — repeated attempts to grow it in other places have failed. Like the bigger tree, its slightly smaller brother is also a native son of California. The California Redwood — or Sequoia sempervirens — is found only in the counties of California that lie just north of San Fran-



A towering mammoth of the California Redwoods.

Perched on the mountainside digging out grade for the logging road.

cisco and in the extreme southern part of Oregon. Although the Redwood is not so massive as the "Big Tree," and averages shorter, it sometimes overtops even the largest of them, and is always a much more beautiful tree with its lustrous leaves, ruddy bark and gracefully curving branches.

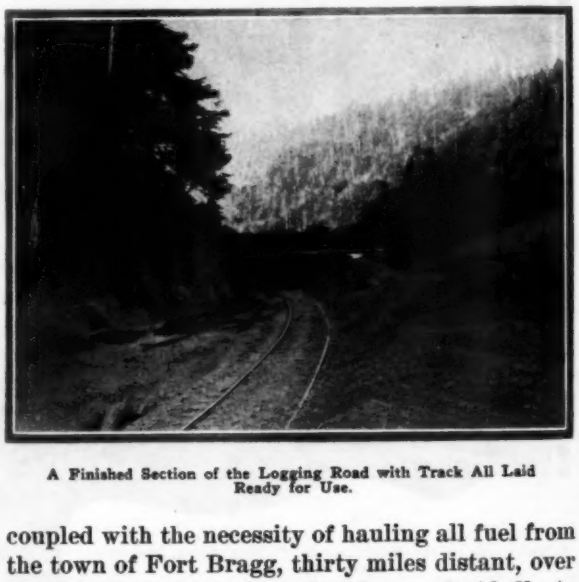
The wood of the Redwood Tree is a very beautiful red, soft and easily worked, as well as being durable; these characteristics, and the fact that beautiful curly grain is quite common in Sequoia lumber, make the wood very much in demand.

Finkbine-Guild Lumber Company Operate Three Mills, All Doing Some Work on Their Redwood Product

Redwood today forms one of the principal products of the Finkbine-Guild Lumber Company. This company, organized in 1901, has prospered and grown so that today they operate three mills — one at Rockport, California, one at D'Lo, Mississippi, and one at Jackson, Mississippi,—as well as carrying on extensive logging operations both in California and in the South. The Rockport mill is kept busy doing the first cutting on the Redwood, while the mills in Mississippi manufacture it into the finished product, as well as handling the large quantity of yellow pine, manufactured by this Company, from the rough logs to the finished product.

Diesel Shovel Purchased for Grading

Into their stand of Mendocino County Redwood, the Finkbine-Guild Lumber Company is building a logging road to lower the cost of getting out the timber, and, as economy is the keynote of such an undertaking, considerable care was given to the selection of a shovel to do the grading of the road. Naturally, fire hazard is ever present when a steam shovel is used in the timber, and this danger,



A Finished Section of the Logging Road with Track All Laid Ready for Use.

coupled with the necessity of hauling all fuel from the town of Fort Bragg, thirty miles distant, over rough mountain roads, pointed very decidedly to the Diesel-driven shovel, with its lack of fire risk and small volume of fuel consumption as the only practical machine to use. Accordingly, a Bucyrus 20-B Diesel shovel, mounted on caterpillars, was purchased for the work.

Shovel Trucked 30 Miles Over Mountain Roads

Since Fort Bragg was the nearest rail point to the Company's timber, and since shipment from the mill will be by water, thus making any line into Fort Bragg unnecessary for their timber operations, the shovel was delivered at Fort Bragg, knocked down, loaded into motor trucks and hauled over the rough mountain roads to the beginning of its work thirty miles away at Rockport. Here the machine was erected, and started in on the first seven-mile stretch of line that is

planned as part of the Company's logging road, which will eventually be twenty miles long.

Shovel Dwarfed by the Huge Trees

A three-quarter-yard shovel doesn't look so very small as it works away at a basement excavation, or as it swings back and forth at work on the grading of a highway in open country, but midst the gigantic trunks of the Redwoods, towering above the normal range of vision, the shovel seemed nothing more than a toy, and it was paradoxical that this tiny machine was to start the work that would lead to the felling of the huge trees.

Logging Road Follows the Creek Bottoms

As may be seen from the illustrations accompanying this story, the road is laid out along the sides of the creek bottoms. In some places it rests right on the bed of the creek and in other places it clings to the sides of steep banks. The cuts average from five to ten feet deep, although in places they run as deep as thirty feet. Since most of the digging is along the mountain sides, all the material is overcast to form the roadbed.

The material encountered consists of a great deal of hard rock intermingled with clay, which necessitates considerable blasting ahead of the shovel. Hercules powder is being used for the shooting. The shovel is working one nine-hour shift per day, and during each shift the fuel consumption amounts to only eight to eleven gallons of fuel oil. Arthur Bowles runs the shovel and is assisted by Wm. Cavanagh on the ground. Much of the future roadbed is composed of fill, and here a Clyde gasoline donkey is being used to level up the roadbed and prepare it for the track-laying crew to follow.

Finkbine-Guild Work Out New Marketing Method

When the present plans of the logging operations are all in practice, the Company will saw the Redwood logs into cants at their Rockport mill, and then ship these timbers to their southern mills for finishing into the completed product. Since the loading of boats at Rockport is a very precarious proposition in the winter time, they have established storage yards at Sausalito, California; here, during the summer months, cants will be stored so that shipments can be made from here during the winter and a steady supply be kept coming to the southern mills.

Camp Supplies to Be Brought Into Camp from Boats, by Cableway

All supplies to start this operation had to be trucked in over mountain roads from Fort Bragg.

Upper View — Close-up of the Diesel Shovel in Action, Showing the Type of Material It Is Handling

Lower View — Part of the Finished Grade Winding Along the Mountain Sides Among the Redwoods

As soon as the mill is in full operation, however, the camp will receive most of its supplies from ocean shipment. The boats, riding at anchor, will land the material on a rock out in the ocean by means of a cableway, and from this rock another cableway will take it into shore.

The officers of the Company are: W. E. Guild, President; W. O. Finkbine, R. H. Finkbine and H. M. Finkbine, Vice-Presidents; R. G. Berry, Treasurer; C. E. Klanib, Secretary. G. D. Alexander is Western Manager; W. E. Ball is Logging Superintendent and Ned Ball is Logging Foreman.

Unavoidable

Mary — "I hear that the shy Mr. Ruddy was in an automobile accident."

Jane — "Yes, Betty Cuddle crowded him off a country road."

Mary — "I didn't know she drove a car."

Jane — "She doesn't. She went for a ride with him." — *Life.*

Hopeful

A darky, being the father of twelve children, all of whom had been rocked in the same cradle, was putting the latest arrival to sleep.

"Rastus", said his wife, "dat cradle am bout worn out."

" 'Tis 'bout gone," replied Rastus. "You-all bettah get 'nother, and get a good one — one dat'll last."

Operations of the Ottawa Silica Moulding Sand Company

Shovel Operations of a New Plant at Ottawa, Illinois, Where a Rich Deposit of Silica Moulding Sand Is Being Worked

ALONG the Illinois-Michigan Canal, just four miles west of Ottawa, Illinois, lies the plant of the Ottawa Silica Moulding Sand Company. This is a comparatively new organization, having been in operation but a year and a half. In that time they have built up a capacity business, supplying the market with an excellent grade of silica sand. The sand is used mostly for steel moulding purposes, the market consisting of steel casting companies in Illinois and neighboring states.

The company was organized in March 1925, with Ross J. Beatty, President, John T. Beatty, Vice-President, Sherman M. Booth, Secretary and Treasurer, and Omer F. Guerin, Plant Manager. The preparation plant was built and equipped, machinery and other equipment installed, and in May 1925, first operations, stripping off the overburden, were started on their 83-acre tract, 60 acres of which is part of Historical Buffalo Rock.

Buffalo Rock was formed by a peculiar geological formation. In some pre-historic age a large amount of fine-grade silica sand was deposited at the bottom of the body of water which covered the central portion of America in that age. Then came a deposit of great masses of other material on top of the sand, causing it to be compressed into its form at present. This sandstone, free from all foreign material, underlies the Middle Western States at a great depth. Any jar or disturbance will cause the sandstone to break up into the sand from which it was formed. Many years later some disturbance caused a block of this sandstone to be pushed up to the earth's surface, extending from Ottawa, Illinois, several miles westward.

As for historical aspect, the Illinois River has cut off about forty feet of the sandstone, extending two miles below Ottawa. Due to some harder strata as the river was cutting its channel, an island was formed, resulting in a hill called Buffalo Rock, sloping upward toward the river where it breaks off abruptly, forming steep cliffs. The Indians used to use this formation in hunting buffalo by rounding up a herd, driving them up on the rock and forcing them to jump off into the river below, which, of course, killed them.

A Close-up of the Preparation Plant.

P & H shovel stripping off overburden. The material is disposed of by a conveyor which dumps over into last year's workings.

Wide Range of Material in Overburden

Before removing the sand it is necessary to strip off considerable overburden. This consists of about 20 feet of clay, then 20 inches of coal, and between the coal and sand there is from 2 to 8 feet of hard, sandy clay. The top clay is ideal for building products, such as hollow clay tile; the coal is very good steam coal and has a ready market locally. The different layers of sand, clay and coal are in well-defined layers, no pockets being encountered. At present a sixty-foot face of sand is being worked and there are about 97 feet below this.

Two shovels, a Bucyrus 30-B electric and a

A Full Dipper Load of Sand Dropping Into the Hopper Ready for Its Trip to the Plant.

A good general view of the plant, showing the sand-loading shovel dumping into the hopper. A second conveyor is loading a car on the siding ready for shipment. At the top may be seen the boom of the overburden stripping shovel.

Close-up of Car Filling Conveyor.

P. & H. gasoline shovel, have been installed to handle the stripping of overburden and sand excavation. The P. & H. was purchased in March 1925 when the company was first organized, and the Bucyrus was installed in April 1926 after the plant had increased in size and operations were carried out on a larger scale.

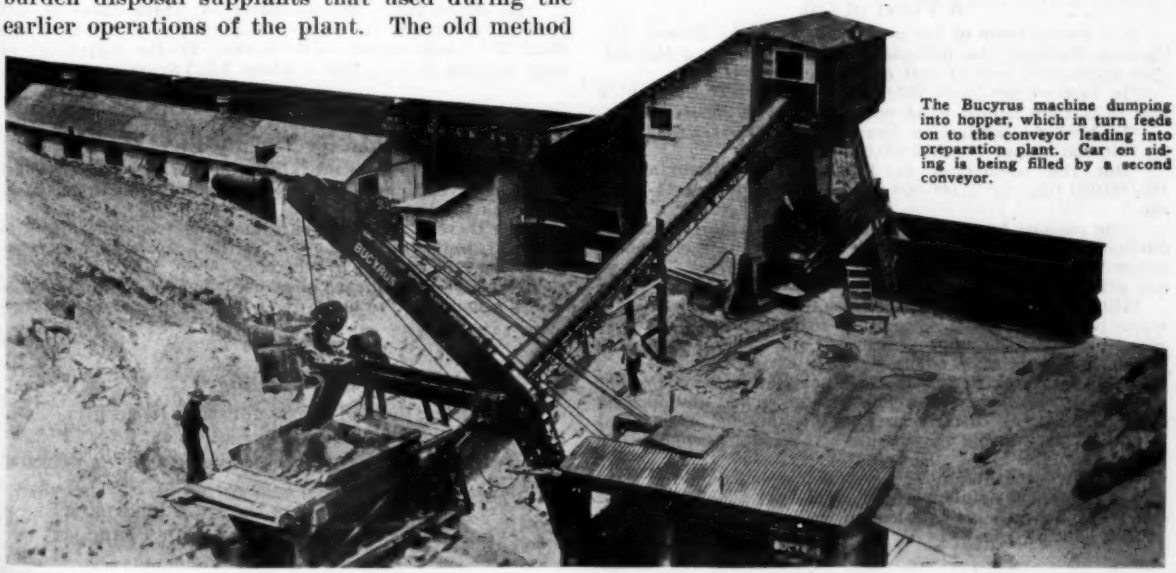
Conveyor System to Dispose of Overburden

The P. & H. is handling the stripping of the overburden, which is disposed of by the means of Barber-Greene conveyors. Two sections of conveyors are being used on this part of the work. One section is 85 feet long and one 40 feet long, the two being connected together. The shovel dumps the overburden into an eight-ton hopper, which in turn delivers on to the conveyors. The spoil is then carried by this means over the face into last year's workings. This method of overburden disposal supplants that used during the earlier operations of the plant. The old method of overburden disposal consisted of dump cars run on a track extending out over the face. At that time a small shovel was stripping the overburden and dumping into the cars. The P. & H. shovel is working one 10-hour shift per day, and handles about 500 yds. of overburden per shift. The operator is John Payne.

The Standard Oil Company delivers gasoline for this machine to a point on the top of the hill near the operations.

Sand Loaded by Electric Shovel

In handling the sand, the Bucyrus electric shovel is employed. It works behind the wasted overburden, which is held back and supported by a retaining wall. It is planned to make cuts 150 feet wide and 1,000 feet long, although it is possible that they will make cuts even wider. The present working pit is horseshoe-shaped, but when fully developed it will be as straight as is possible. The sand is all blasted down ahead of the shovel with Trojan and du Pont dynamite. It is drilled



The Bucyrus machine dumping into hopper, which in turn feeds on to the conveyor leading into preparation plant. Car on siding is being filled by a second conveyor.

from the top and also from the bottom with Sullivan Machinery Company's air drills and auger rotators. All holes are sprung and detonated by means of electric caps. Eventually they expect to use the big blast hole method. The shovel works one 10-hour shift per day, and handles from 1000 to 1500 tons of sand per shift. The operator is Geo. R. Whiteside. Here, another Barber-Greene conveyor is used for the purpose of taking the sand from the shovel to the preparation plant. This conveyor is about 120 feet long, and receives the sand from a hopper fitted with a six-inch grizzly into which the shovel dumps directly. All conveyors at this plant are electrically operated. The belts are all 24 inches wide, ½ inch — six ply with a ⅛-inch covering and a 1/16-inch back.

A Modern Preparation Plant

The preparation plant is fitted with the most modern type of machinery and can be operated with very few men. The average daily output of the plant is 1500 tons. It is possible to load out a 50-ton car every fifteen minutes. The conveyor coming from the shovel carries the sand on to a Galland-Henning Rollerless revolving screen, the screen cloth of which has ½-inch openings. The undersize is carried to the cars on the sidings by a conveyor, and the oversize goes to a Williams hammermill, which is a 35 roller-breaker. This product is rescreened, the oversize going back to the hammermill. The sand is then discharged on to a conveyor from the hammermill and goes into the cars. The preparation plant and all conveyors are electrically operated throughout by General Electric motors, current being supplied by the Illinois Power and Light Company. The Illinois Traction Company supplies the sidings for shipping facilities. The cars on the sidings are moved by the means of a Stephens-Adamson's capstan type car puller.

With the great increasing number of electrically driven excavating machinery units in operation throughout the United States, the manufacturer of electric power becomes of greater interest to the man interested primarily in excavation. An interesting example of the tremendous volume in which electricity is made today is given in the electricity generating station to be constructed by the State Line Generating Company on the shore of Lake Michigan in Indiana. This station will have a capacity of 1,000,000 kilowatts or approximately 1,335,000 horse power. Just contrast this with the power of your automobile which will average from twenty to forty or fifty.

In this new station will be a new steam turbine generator rated at 208,000 kilowatts or nearly 280,000 horsepower. This unit, manufactured by the General Electric Company, is nearly three times as large as any machine in service today, twice as large as any being manufactured today, and will generate its tremendous volume of electricity at a pressure of 18,000 volts, and will operate at the speed of 1800 r.p.m. This new power station will generate current to be sold at wholesale to the interconnected power companies in the Chicago, Illinois-Indiana district.

A Flood of Oil

In a recent issue of his paper, *The Gas Age Record*, Mr. Parsons discusses the influences that have checked the old-time production rate of soft coal. He says:

"In 1890 we produced 157,000,000 tons of soft coal which was more than double what was produced in 1880.

"In 1900 the production jumped to 269,000,000 tons, and by 1910 the output was 502,000,000 tons.

"But the production in 1924 will be approximately 480,000,000 tons, or 21,000,000 tons less than it was 14 years ago.

"The reasons for this are the enormous jump in the production of petroleum; the harnessing of 10,000,000 horse power in the form of water, and the improved efficiency of our general fuel practices.

"Oil has done the work of at least 100,000,000 tons of coal; water power has displaced another 40,000,000 tons, and it is estimated that the improvement of our general fuel consuming practices saves another 75,000,000 tons.

"This indicates that if we had not run into the present flood of oil, and had not developed water power, or improved our fuel practices, that the present consumption of soft coal in this country would be running at the rate of 700,000,000 tons annually."

When we consider our ever-growing demands for fuel, it is Mr. Parsons' opinion, that the principal hope is the coming years lies in a more scientific utilization of our supply of soft coal.

Deep Holes

The deepest hole in the world, according to Dr. Thomas T. Read, of the United States Bureau of Mines, is in West Virginia, where one was bored to a depth of 7,579 feet, in search of natural gas.

The deepest mine in the world is the St. John del Ray mine in Brazil, a gold mine started in 1834. It is situated in the oldest mining region in the new world, gold having been mined there for well over two hundred years. Its workings extend to a depth of 6,726 feet vertically below the top of the main shaft.

The gold mines of the Transvaal, South Africa, take second place for depth, the Village Deep workings extending to a depth of 6,263 feet.

The deepest mine workings in the United States are those of the Calumet and Hecla Consolidated, on the Keeweenaw Peninsula, Michigan.

The copper deposits here are inclined, and the deepest workings are 5,990 feet vertically below the surface. The deepest vertical shaft is 4,900 feet deep. There are several inclined shafts in this district that are over 8000 feet long, but vertically they are not so deep as those mentioned.

The oldest mines in the world of which there is any certain record are the copper and turquoise mines of the Sinai Peninsula which were worked by the Egyptians as early as 3700 B. C. — that is about 5,625 years ago.

Law Broken for Twenty-Five Years

Motorists have been breaking a law of Iowa for the last twenty-five years, until the Legislature has had to repeal it. This was the law:

"The traveling motorist is ordered to telephone ahead to the next town of his coming, so that owners of nervous horses may be warned in advance."

Nowadays, it's a rare occasion when an Iowa motorist passes a horse on the highway. — *The Municipal World.*

No Kidding

"I want a pair of shoes for this little girl," said the mother.

"Yes, ma'am," answered the shoe clerk. "French kid?"

"Well, I guess not," was the irate answer. "She is my own child, born right here in San Francisco."

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Outlook Bright for 1927

The condition of general industry and the condition of our own go hand in hand. The condition in the building industry is dependent very considerably upon the condition of industry as a whole. It has been said many times, during the past year, that the recent amazing business activities depended a good deal upon the unusual activity in the building industry.

In the early part of 1926 it will be remembered that many persons looked forward with misgivings to the middle part of the year, and as the middle of the year was reached their gloomy forebodings were for the latter part of the year. And now that the end of the year has been reached, we hear, as this is written, some ill-considered comments upon the business conditions of the immediate future. Careful study shows no sound reason for such prophecies, and perhaps it would be well to quote a business forecast by the Continental and Commercial National Banks of Chicago, who, with their thousands of customers representing all lines of commercial and industrial activity, with their directors composed of the outstanding executives of American business, and with a staff of statisticians and economists at their disposal, are in a position to determine with scientific accuracy the course of business in the past, and to judge with considerable accuracy what the future holds.

"Good business is in prospect for the first half of 1927. And this opinion can be stated with a feeling of assurance. It is based on current statistics.

"There has been much guesswork recently as to the probable speed of the business machine next year. A short time ago there was widespread talk of a coming depression, but this has been tempered. A slowing down is to be expected, because the United States never has known a volume of production comparable to 1925 and 1926. This is considered by the Continental and Commercial Banks in their current study.

"Business may be good throughout 1927. But the first half of the year is a foreseeable period, whereas a prediction as to what is likely to happen during the entire year would be more of a guess than a statistical forecast.

"During the first six months of the new year, the volume of business probably will not exceed the volume of the last half of 1926. It may even be somewhat less. It could be and business would still be good.

"The automotive industry may produce about four million cars in 1927, rather than four and a half million, the record figure of 1926. New building will probably not be maintained at quite the same level as in 1926. A reduction in the money income of farmers — chiefly cotton growers — will also be a moderating influence, although farm income has not been reduced enough to cause any general unsettling of trade. Manufacturing output may not hold at the 1926 level, but there is nothing now to indicate a slump that would result in general unemployment and drastic curtailment of the purchasing power of industrial workers. The railroads will doubtless maintain their present efficiency — an efficiency that has made possible hand-to-mouth buying and has contributed appreciably to the ease of commercial credit. Above all, there is no sign of tight money and consequent forced liquidation. The money market will sustain rather than curtail active business.

"The forerunners of business depression — rising prices, increasing costs, labor inefficiency, excessive inventories, a marked decline in the number of business failures, credit stringency — these are conspicuously absent from the current statistics of business.

"Business irregularities, particularly as between sections, lines of industry and individual concerns, will doubtless appear. Such irregularities are always found. But, speaking generally, somewhere near the present volume of business can be expected during the first half of 1927. And there is no reason to assume that this business will be accompanied by a disconcerting diminution of profits."

The total amount of money drawn from banks in the form of cash throughout the country forms a very good yardstick with which to measure the volume of trade. This figure has dropped somewhat in the past few weeks. It should be remembered, however, that this figure includes not only commercial transaction but speculative operations which are probably less widespread than they were

a year ago. The National City Bank has prepared the following table:

Bank Debits in 1925 and 1926 Compared

	Per Cent Change First Ten Months Over 1925	Per Cent Change Four Weeks Ended Nov. 17 Over 1925
Boston	+ 8.0	— 2.0
New York	+ 9.4	— 8.3
Philadelphia	+ 3.8	+ 1.5
Cleveland	+ 4.7	— 2.6
Richmond	+ 2.4	— 0.8
Atlanta	+ 5.0	—11.4
Chicago	+ 6.2	+06.
St. Louis	+ 3.6	0.0
Minneapolis	— 7.7	— 5.0
Kansas City	+ 5.0	+ 5.0
Dallas	+ 2.6	— 2.0
San Francisco	+10.6	— 0.4
All Districts	+ 7.7	— 5.0

As long as money is easy there is little reason to look forward to anything but normal business activity. The rates on both call and time money have been decidedly easy, and there has been an ample supply of money available for loans. An indication of this is the calling of a thirty-million dollar loan during the first part of December. Just before this loan was called the rate had risen gradually from 4½ to 5 and 5¼. With the calling of this loan the rate stiffened to 5½, but in a few days had reacted to and ample money was available at the low rate of 4½.

The steel industry is making a good showing, particularly when it is considered that it enjoyed unusual activity during last summer. October production of steel totaled 4,093,000 tons.

One of the reasons for depressions in the past has been the carrying of large stocks by purchasers. Thus the present hand-to-mouth buying which has been prevalent since 1920 is a feature which promises continued business activity.

The one place where hand-to-mouth buying apparently does not hold at the present time is among the users of bituminous coal. The users of coal are apparently laying in supplies against a possible interruption supply next March when the Jacksonville agreement terminates.

Cotton is not the depressing factor in the general outlook that it was a month ago, a surplus equal to half of a yearly crop will apparently be handled without any extremely serious financial difficulties in the South. Cotton is not as important in the South as it was formerly. The Southern farmers have diversified their crops so that they are no longer dependent upon cotton alone.

Building has been going ahead at a very rapid pace for a long time, and while it is possible that some slight slackening off may occur no major decline seems imminent. It is interesting to note that recent surveys of residence requirements in New York City are said to have revealed no more than a normal number of vacant dwellings and apartments. It is not natural for construction to slow-up when building costs are on a stable basis, and any slackening in residence construction will merely lead to activity in the construction of other types of buildings.

Excavation on Road Work for 1927

IN 1923 the total amount of money spent for roads, Federal aid, state and county, amounted to about $990,000,000. In 1924 it was approximately $1,181,000,000, in 1925 it was over $1,000,000,000, and in 1926 it is estimated to have been $1,030,000,000. This figure does not include the streets within the limits of our cities but those arteries of travel which are called highways.

The Bureau of Public Roads gives the figure of three million miles for the length of our rural roads, and 270,000 miles for the length of state highways, and under the heading of local roads the figure of 2,731,000 miles is given. One billion dollars for one purpose, or $1,350,000,000 if the expenditures for city streets is included, places the expenditure ahead of the expenditure of any other one purpose.

Through the co-operation of the various State Highway Departments throughout the United States *The Excavating Engineer* has been able to present a brief outline of the highway work contemplated during the coming year in the states listed below. It is unfortunate for the purposes of such a collection of material that the plans of many of the states are not formulated until later in the year. In many cases the budget is not made up until later in the year, and in many states the appropriation, at the time of this writing, is awaiting to be approved; in some it is against their policy to publish. Where information for states is received too late for this issue, it will be included in later numbers.

In general the paragraphs which we give below contain figures for Federal, State and County work, but do not include such road construction as is planned and paid for by cities and towns. In addition to the amount of excavation that is estimated below, it is probable that certain further excavation will develop as the work gets under way.

It is interesting to note that if 40% of the amount of road outlined below is assumed to be gravel surfaced, and additional excavation figured on this assumption, a very material amount of digging will be added to the estimate under each state. Past experience has shown that gravel pit excavation and borrow pit work which have not been included in the figures below have formed a very considerable addition to the estimated digging obtained from the Highway Departments.

Arizona

A definite program will not be settled until some time after the first of the year when the Legislature convenes.

Arkansas

The administration of the Arkansas Highway Department changes on January first, and consequently no definite plans have yet been made for 1927. There should be about $4,000,000 available for construction work according to the report. All contracts for the work authorized in 1926 have been authorized excepting $600,000, which is practically all bridge work. This involves about 15,000 yards of excavation, none of which is suitable for shovel work. Definite information of the work for next year will be available about February first.

California

The main activity of the Commission is maintenance of state highways and grade and pavement reconstruction and widening. For the biennium from July, 1927 to July, 1929 about $15,000,000 will be available for reconstruction, and about $10,000,000 for maintenance. This is for a two-year period. At the present time, construction funds available to the state will average about $2,500,000 per year. Reconstruction projects include some steam shovel work. However, the greater part of the money is spent on pavement widening, and little steam shovel work is necessary.

Colorado

About $750,000 worth of highway work is being planned, both new and reconstruction, involving about a million cubic yards of excavation. None of this will be available for shovel work. Approximately a million cubic yards of excavation work will be involved in the work carried over from 1926. All of this has been contracted for and very little of it involves shovel work.

Connecticut

It is against the policy of the Highway Department to give out its program for future construction.

Delaware

The information concerning the road-building program in Delaware for the year of 1927 will not be available until the latter part of March or the first of April.

Idaho

Idaho is planning about 500 miles of new roads and highways at a cost of $5,000,000, involving approximately 5,000,000 cubic yards of excavation. About 20 per cent of this will be suitable for shovel work. About $200,000 worth of reconstruction work will be carried out, none of which will involve shovel work. $550,000 worth of work authorized in 1926 is being carried over into 1927 for completion and all has been contracted for.

Kentucky

The new road and highway construction work for 1927 in Kentucky will total 550 miles at a cost of $9,000,000. About 100 miles of this will be heavy mountainous work, and about 200 miles will be suitable for shovel work. About 100 miles of reconstruction work are available, about 25 per cent of which will involve shovel work. About 400 miles of the work authorized in 1926 will be completed in 1927, and about 350 miles of this has already been contracted for. About 200 miles of the work to be finished in 1927 will be shovel work.

Maine

150 miles of work are planned exclusive of Federal aid and state highway. No funds are available for Federal aid and state highway work. The work planned will cost approximately $2,000,000, involving about 150,000 cubic yards of excavation. None of this will be suitable for shovel work. About $600,000 is available for reconstruction work. About forty per cent of the reconstruction might be suitable for shovel work. The total amount of contracts let in 1926 totaled $3,000,000. All of this has been contracted for and 90 per cent of it is completed. All the excavation for this work has been completed.

Maryland

About 124 miles of new road and highway construction work are planned for 1927 at a cost of about $3,000,000. This will involve about 325,000 cubic yards excavation, and fifty per cent of this will be suitable for shovel work. Sixty-five miles of the work authorized in 1926 is being carried over into 1927 for completion, involving 10,000 cubic yards of excavation, twenty per cent of which will be shovel work, and all of which has been contracted for.

Massachusetts

The construction work for 1927 has not been definitely decided upon in detail.

Michigan

No information for 1927 program yet available.

Minnesota

Trunk highway and state aid roads to the extent of 1500 miles are planned, involving about 15,000,000 cubic yards of excavation. About 3,000,000 cubic yards of this will be suitable for shovel work.

Mississippi

Approximately 150 miles of new road and highway work planned for the year of 1927, involving about 1,000,000 cubic yards excavation. About 25 per cent of this will be available for shovel work. About $2,000,000 worth of work let in 1926 will be carried over into 1927, all of which has been contracted for. This involves about 1,000,000 cubic yards excavation.

Missouri

At the time this is written, nothing more than a very rough estimate was available, so it is impossible to give any definite figures, so the following figures are more or less guesses. Six hundred miles of grading are planned, involving 6,000,000 cubic

yards of excavation. About ten per cent of this is estimated to be suitable for shovel work. No estimate is available on the work authorized last year.

Nebraska

The state plans 1500 miles of gravel surfacing and 1500 miles of grading work at a total cost of $16,000,000. The excavation involved in this work will total about 9,000,000 cubic yards, about 1,000,000 yards of which will be suitable for shovel work. About $3,000,000 is available for construction work, none of which will be suitable for shovel work. The amount of work authorized in 1926 totaled $8,000,000. This involved about 4,000,000 cubic yards excavation, all of which has been contracted for and is about 80 per cent complete.

New Hampshire

All highway work in this state is done on the co-operative basis with the towns, they paying part of the expenses and the State and Federal Government a part. The department is unable to plan for another season until the winter and they know what action the towns will take in regard to the particular projects.

New Jersey

About 100 miles of highway work planned involving no extremely heavy excavation work, as most of it will be reconstruction and permanent surfacing of sections heretofore of a less permanent type.

New Mexico

Information not available at present time.

New York

The state has laid plans for 257.77 miles of new highway and road work at an estimated cost of $12,850,000. The excavation involved will average 10,000 cubic yards per mile, about eighty per cent of which will be suitable for shovel work. Reconstruction work at a cost of about $12,000,000 will be undertaken. This work involves about 15,000 cubic yards excavation per mile, and about fifty per cent will be suitable for shovel work. The amount of work authorized in 1926 to be finished in 1927 is not definite, and information will not be available until January first.

North Carolina

Relative to the work proposed during the year 1927, the Commission reports that it is entirely dependent upon what the next session of the Legislature does in the way of a bond issue, and what they will do is problematical.

North Dakota

The State Highway Commission is planning some 700 miles of new road and highway work for the year of 1927 at a cost of approximately $3500 per mile, involving about 5,000,000 cubic yards excavation. About five per cent of the excavation work will be available for steam shovel work. In 1926 contracts for 840 miles were let, and 500 miles are completed with approximately 700 miles carried over into 1927. Of the 700 miles approximately 200 are 90 per cent complete. This work averages about 6000 cubic yards excavation to the mile, none of which is available for steam shovel work.

Ohio

Some three hundred miles of hard surface and five hundred miles of macadam road constitute the program for 1927. This involves 2,000,000 cubic yards of excavation and about 25 per cent will be suitable for shovel work. About $6,000,000 are available for reconstruction work. Very little of this will be suitable for shovel work. 700 miles of work at a cost of $20,000,000 were authorized in 1926, involving about 1,000,000 cubic yards of excavation.

Oklahoma

Three hundred miles of new road and highway work planned for the year of 1927, costing approximately $6,000,000, involving about 3,000 cubic yards excavation per mile, none of which is available for shovel work. All work unfinished in 1926 and carried over into 1927 has been contracted for.

Oregon

Between 200 and 250 miles of new road and highway work are planned at an approximate cost of $3,000,000. This work will involve between four and five million cubic yards of excavation, about half of which will be suitable for shovel work. About one million dollars worth of work will be carried over from 1926 into 1927, all of which has been contracted for. This work involves about 1,500,000 cubic yards excavation and about half of it is suitable for shovel work.

Pennsylvania

No information is available at the present time concerning the 1927 road-building program, due to the change of administration which takes place in January 1927.

Rhode Island

Rhode Island expects to complete in the neighborhood of 35 miles of new construction in 1927, at a cost approximating $1,500,000 and involving approximately 200,000 yards of grading. Eighty per cent of this grading will be suitable for shovels. They expect to complete approximately 20 miles of reconstruction. Shovel work is involved on this work as on new construction and to almost the same extent.

South Dakota

The state of South Dakota is planning 450 miles of new road and highway work at a cost of $1,575,000; counties are planning 1500 miles of work at a cost of $2,310,000, and townships are planning temporary grading work at a cost of $1,000,000. The state work will involve about 4,200,000 cubic yards of excavation, counties 7,000,000 cubic yards. The township work is practically all repair work. About 50,000 cubic yards of the state work will be suitable for shovel work. None of the county and township work will be shovel work. About 90 miles of the work authorized in 1926 is being carried over into 1927 for completion. This work is all under contract at a cost of $350,000, and involves about 890,000 cubic yards excavation, about 10,000 yards of which could be shovel work.

Tennessee

Construction program for 1927 not yet adopted.

Texas

The Commission advises that they do not have sufficient data to give an accurate account covering projected work for the year of 1927. They state, however, "that there is under construction approximately $12,000,000 on highways, and it is possible that this will approximate $15,000,000 during some parts of 1927. Considerable amount of work covers the first

units of projects, and comprises the grading and drainage structures — mainly of which requires considerable amount of fill and excavating in the more rugged sections of the state. Very little steam shovel work will be necessary on state highway projects."

Vermont

The campaign pledges before election of governor call for at least 40 miles of highway work at a cost of $2,000,000. This will involve about 150,000 cubic yards of excavation work, from 50 per cent to 60 per cent of which will be suitable for shovel work. No figures are available for reconstruction work. $240,000 worth of work was authorized in 1926, of which all is under construction and will be 60 per cent completed in 1926. None of this work carried over into 1927 will be suitable for shovel work.

Virginia

Final allocations for the 1927 program have not been made by the Commission. The excavation for the new program will approximate that of 1926.

Washington

The amount of highway work undertaken next year in this state will be determined by the Legislature which meets in January.

West Virginia

Information not available until about March 1, 1927.

Wisconsin

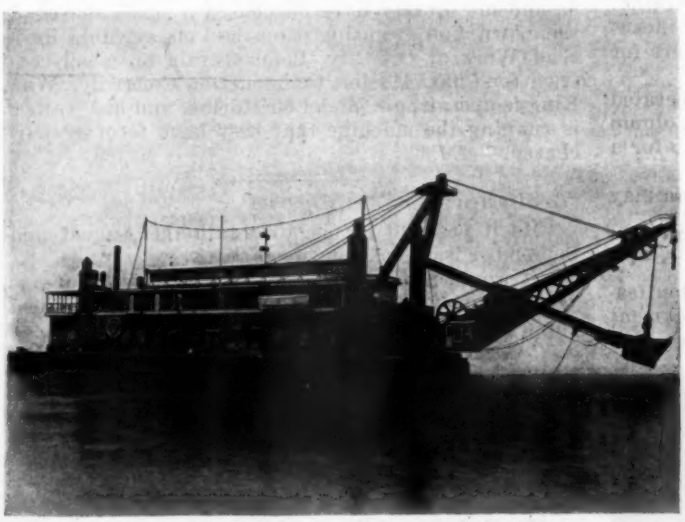
The Commission reports that 932 miles of road and highway construction work is projected for the year of 1927 at a cost of $17,600,000. 375 miles of this will be concrete work, and the balance gravel and miscellaneous types. This will involve about 10,000,000 cubic yards of excavation, 50 per cent of which will be suitable for shovel work. Of the work projected in 1926 to be completed in 1927, 20 miles of concrete work remain to be completed, and 100 miles of gravel and other types remain to be completed. This work will involve about 50,000 cubic yards of excavation and 50 per cent will be shovel work.

Wyoming

The Commission was unable to make any forecast as to new work until funds were made available by Legislature during the month of January. During the year of 1926 approximately $350,000 worth of work was authorized, all of which is under construction or completed. No heavy excavation is involved here, as it is all surfacing and bridge work, so there will be no shovel work available.

First Full Diesel-Electric Dipper Dredge Manufactured in This Country in Operation on Eastern Coast

Built for the Great Lakes Dredge and Dock Company by the Bucyrus Company of South Milwaukee, the full Diesel-Electric Dredge Crest is in operation



off Staten Island, New York Harbor. This boat is the largest and most powerful dipper dredge yet built. Its hull dimensions are 167 feet long and 48 feet wide. It is fitted with a 10-yard rock-digging dipper and has a digging depth of 52 feet. It has a bail pull much in excess of the 15-yard Bucyrus Panama dredges "Paraiso" and "Gamboa." The main power plant on this boat comprises two 600 horse power Fairbanks-Morse Diesel 6-cylinder engines of the two-cycle solid-injection type, driving direct current generators generating at a potential of 230 volts. For standby purposes a 120 horse power, two-cycle Diesel engine is on board. Supplying lighting current are two 125-volt generators driven by two 7½ horse power Diesel engines.

General Electric electric motors and generators are used throughout; seven main motors of large horse power being necessary to drive the thrust, hoist, backing, swing and spud machinery. In all the boat has upon it 35 electric motors.

Some further idea of the size of the boat may be gained from the size of the spuds — 85 feet long and 51 inches square.

The main hoist is through twin cables 2⅜ inches in diameter reeved over 9-foot boom point sheaves—it is a single part hoist.

Maxim silencers muffle the noise of the large engines. Shower baths with hot and cold water are part of the comfortable crew accommodations found on board. A social hall is provided for the men, and the galley is equipped with a cold storage system.

"Are you driving your car with a last year's license?"
"No you saphead, with gasoline."

New All-Steel Trailer

The Miami Trailer-Scraper Company of Troy, Ohio, announce a new bottom dump trailer designed especially for use with tractors or, where speed is kept down from 10 to 12 miles per hour, with motor trucks.

The capacity of the standard trailer is 1½ yards, although a top box may be added giving it a water level capacity of 2 cubic yards.

The trailer is of steel construction throughout, and the manufacturer claims that this steel construction, in spite of the fact that the very best grade of material and the best workmanship are used throughout, is the lowest-priced 2½-ton trailer on the market today.

The wheels are equipped with Timken tapered roller bearings 40 inches in diameter and have a 7-

New Miami Trailer-Scraper Company All-Steel Roller-Bearing-Equipped Trailer with Top Box Giving It a Capacity of 2 Cubic Yards.

inch tire face. The wheel hubs are so equipped that they are practically dirt-proof. Lubrication of the wheel bearings is by Alemite nipples.

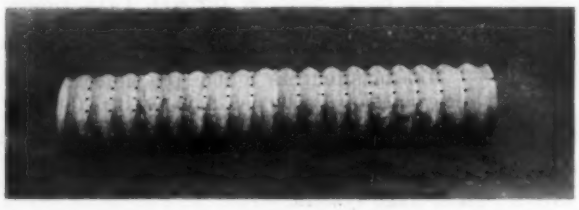
The drawbar is so arranged that the trailers may be hauled in trains of two or more by mounting a connector to the rear cross member of each trailer. The total height of the 1½-yard trailer is 56 inches from the ground. When equipped with top box for 2 yards the height is 61 inches.

The dumping and winding levers may be operated from the tractor set by means of rope. The dump body may be removed, leaving the chassis clear for a flat platform body if desired.

Further information and descriptive bulletin may be had from the manufacturers at Troy, Ohio.

Armco Exhibit Shows Jacking Method

The exhibit of the Armco Culvert Association features a model of a section of highway embankment through which a culvert is being jacked into place.



This method of placing culverts has since its perfection about a year ago found wide acceptance among railway engineers. Its advantages appeal also to highway engineers who have made use of this method in a growing number of cases.

Other features of the Armco exhibit include sections of perforated corrugated iron pipe for subdrainage purposes, automatic drainage gates for control of flood waters, nested sections of standard highway culverts in sizes from 12 to 66-inch diameters, and large explanatory charts showing the savings in cost and time possible to obtain in highway work.

From THE MAIL BAG

"Dear Sir:

"I wish to get my name on your mailing list again, as I can keep better posted on changes in shovels. I can add one year to the man's record as a shovel runner, as I did my first on an 'A. A. Barnhart' in 1904.

"I have run friction swings, also one 'Thompson style Bucyrus' which had an overhead circle. I operated one 65 No. 291, also 401, which got the Blue Ribbon at the Pan-American Exposition. I am operating a 320-B for the Dawson Daylight Coal Company now and still going strong.

Yours respectfully,
W. E. CHAMBERS."

Mr. Chambers apparently refers to the mention of Charles Hadley made on page 342 of the September number of *The Excavating Engineer.* Mr. Hadley's record was that he had operated *one particular machine* for 21 years.

Mr. Chambers has operated a number of machines in his time. We congratulate him, however, upon his 22 years of shovel operation. — *Ed.*

Wm. King of Oil City, Pennsylvania, writes that he and his brother have purchased a small shovel of their own, and are using it on the Pennsylvania Railroad Work at Oil City, Pennsylvania on a sub-contract for Chas. A. Sims Construction Company. Wm. King is operating a Model 60 Marion, and his brother is running the machine that they have recently purchased. — *Ed.*

"Gentlemen:

"Is it possible for me to obtain the August and September issues of your magazine?

"I would also like to take your magazine for one year, if you will quote me your price so I can send you a money order for same.

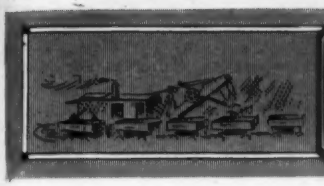
"At present I am employed by S. A. Healy of Detroit, Michigan.

"Hoping to receive the August and September issues of your magazine and thanking you very much, I am

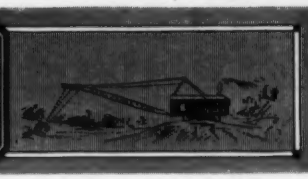
Yours very truly,
W. K. DEAL."

The August and September numbers of *The Excavating Engineer* have been sent to Mr. Deal.

We will be glad to send Mr. Deal the paper from time to time without charge, and if he wishes to receive every issue the subscription price is one dollar a year, 12 issues. — *Ed.*



SHOTS FROM THE FIRING LINE



Wm. P. McDonald's ¾-Yard Clamshell Machine Produces a Record

We understand from Mr. J. W. Grass, Superintendent of the W. P. McDonald Construction Company, that not long ago this company's Bucyrus 20-B steam machine working as a clamshell unloaded 1150 cubic yards of Florida lime rock in a 10-hour working day. The man at the levers is Lee Aiken. This tonnage laid 2536 lineal feet of 15-foot road 6 inches after compressing. The stone weighs about 2600 pounds to the yard.

Eastern Pennsylvania Notes

BY H. C. DAVIS

While at Cornwall, Pennsylvania, recently, I met Mr. Paul Entrekin, chief engineer for the Bethlehem Mine at that place. He showed me the big hole in the ground, where for many years mining on a large scale has been in operation. There are two Bucyrus 103-C's, one Bucyrus 70-C, one Marion 300 and one Marion 37 in operation. A list of the operators is as follows: Allan Ditzler, Chas. Seibig, Monroe Gelb, Paul Miller, Percy Becker and Annon Reppert.

I dropped in to see Dan O'Connell at the International Brotherhood Office in Philadelphia recently. Our old friend seems to be in good health and spirits, and according to Dan, if good behavior means anything at Xmas, Santa Claus ought to treat him generously.

R. H. Cunningham & Sons, Turtle Creek, Pennsylvania, have a Bucyrus 41-B and 20-B steam at work near Birdsboro, Pennsylvania. Wm. E. Martin is running the 41-B, Harry Heminig is firing and "Red" Ambrose is pulling the rope. On the 20-B I found our old standby, Dan Overdorff, handling the levers and Ellwood Meyers shoveling the coal.

Wm. Crusan of West Philadelphia is running a shovel for F. P. Behn of Reading. John Carmany is firing.

Oscar Hoch of Allentown, Pennsylvania, is busy excavating and putting in foundations, and is using the latest methods to beat the cold weather. He has work at Law and Turner Streets, 4th and Chew Streets, and 9th and Hamilton.

A couple of our old reliables, Norman Beil and Ray Bitler, are running Bucyrus 103-C electrics for the Bethlehem Steel Quarry at Bethlehem, Pennsylvania. Reilly Sary and Mike Guidon are craning, and there is a combination that is hard to beat.

I dropped in to pay my respects to Mr. W. H. Hart, superintendent for the Duquense Slag Company at Birdsboro, Pennsylvania, not long ago. Their Bucyrus 70-C is hitting on all eight with Walter Hilbert on the levers. Leonard Garman is craning and Richard Smith is firing.

New England Notes

BY E. J. O'CONNOR

Construction on the much discussed Southern Artery in Boston has begun. J. C. Coleman and Sons Company of Boston have one section, E. C. Sargent of Quincy have another, and a third section is to be let soon. This roadway will do much to relieve the intolerable congestion at Quincy Square which the Cape Cod bound traffic has had to contend with for years. Mr. Lewis Fritz is the engineer in charge for the State of Massachusetts. Mr. Fritz will be remembered as resident engineer on the famous Newberryport turnpike.

The Northern Artery is practically completed now, but Coleman Bros., Boston, have some work to do before acceptance.

With all the street widenings and tremendous building development of Park Square, visitors to Boston will hardly recognize the New England metropolis.

The Connecticut Quarries Company have decided to develop another level of their Middlefield quarry. Mr. Kimball is the superintendent there.

John Bristow, Narragansett Pier, Rhode Island, was recently awarded a good-sized job at Devils Foot, Rhode Island. However, only the cut-offs will be stone this year, the major portion to be completed next season.

The annual dinner of the New England Road Builders Association took place January 7. As usual as is said in the papers, "a good time was had by all." Over 800 were in attendance, and included most of the highway officials and contractors of prominence in New England.

The unusually early snowstorms brought a cessation to road work a little sooner than anticipated this year. Not much fun for trucks and shovels in two feet of snow.

Antonio Pallotto is going right along with his quarry development. His crusher is being installed now, and the new bins are being built. Mr. Pallotto can expect a ready market for his stone as there is no competitor quarry near his plant. However, if he gets as much work this year as last from the Highway Department, he'll use his total output himself.

T. Stuart & Son were successful bidders on the new Cottage Farm Bridge in Boston. This is a million-dollar job, and will complete the bridging of the Charles River for some time.

An overpass at Governor Square, Boston, is contemplated in the near future.

C. W. Blakeslee and Sons finished their stretch of the Boston Post Road recently. This is surely one fine piece of road.

Everything points to a banner year with the road builders next year. All states in New England are to build more extensively next year. Building contractors do not feel quite so optimistic. The terrific slump in the textile industries has begun to affect the rest of this region, so that not quite as much work in building can be expected.

"Micky" McGee is to run one of Coleman's Bucyrus 20-B machines on the Southern Artery.

Tom Kehoe is running an Erie "B" for Frank Palmer of Stamford. Mr. Palmer has had a very successful season.

The U. G. L. Co. is making good progress on their Rocky River hydro-electric project for the Connecticut Power and Light Company. They have an Osgood 1-yard machine, a P. & H. gas utility machine, and two Bucyrus draglines, a Class-24 and a Class-14.

New York and Vicinity

BY T. A. BURNS

As we go to press Union 184 is mobilizing for its annual dance and other things. We trust by the time this issue reaches multitudes of our subscribers in New York the fellows will all be out again and able to see with both eyes.

D. C. Serber, Inc., are now located on Vermilyea near 207th Street. Don't misunderstand us, we don't mean this is how it looks, this is what it is.

SHOTS FROM THE FIRING LINE — Continued

R. F. McDonald of the Franklin Contracting Company is about due in New York. If he and Al. Kurtz will come to see us between Christmas and New Years we know a place to do a Virginia Reel.

James Pagliaro is now located at 87th Street on Riverside Drive. Not in residence, perhaps, but quite permanently located.

Tommy Hand and C. M. Steinmetz must be "holdin'" up in the hills of Sussex County in New Jersey for the winter, the heart of the apple belt. It will be recalled that Jersey is famous for one other thing besides justice.

W. A. McLold, formerly with the Johns-Mansville Company of Asbestos, Canada, is now connected with the Consolidated Quarries Company of Montclair, New Jersey.

James Manning and Gene Connelly, of the Gaffney Construction Company, who hold a record for quantity production on street excavating work in Manhattan and the Bronx, have from now until March 31st to change three bolts, two rivets and one cable.

Oregon and Vicinity

BY H. L. NILES

J. N. Sherk, who is now operating the Bucyrus 20-B Diesel shovel for the Hedlund Lumber & Mfg. Co., of Marcus, Washington, advises they are now working on twenty miles of logging road, which in most part is heavy excavating, and that the shovel is working very satisfactorily.

J. A. Tertling & Son, Moscow, Idaho, have recently shipped a Bucyrus 20-B Diesel to Riggin, Idaho, to work on a nine-mile section of heavy excavating on the north and south highways between Weiser and Lewiston. There is one more section yet to be let which will complete this road.

Campbell Construction Co., Renton, Washington, started their work with a Bucyrus 20-B Diesel on the high line between Tacoma and Seattle April 1, 1926, and completed this construction October 1st with a total yardage of 175,000, most part of which was very heavy material. They have also just completed a 25,000-yard job in Pierce County. They are now anxious to either rent their shovel or take another contract.

Pacific Coast Notes

BY P. H. BIRCKHEAD

E. A. Hester, Bert Hinds and S. W. Williamson are operating a Bucyrus 20-B steam shovel at Oakland for Bates & Borland.

Robert Kneedler and Walter Elliott are operating a Bucyrus 20-B steam shovel for contractor P. Montague in San Francisco.

Contract awarded by the Board of Supervisors of Los Angeles County Flood Control District, Hall of Records, Los Angeles, to Ross Construction Co., Van Nuys Hotel, Los Angeles, who bid $.28 per cubic yard for the improvement of the Ballona Creek Canal, work involving 58,700 cubic yards excavation. Also $.03 for haul per yard.

United Dredging Co., Central Building, Los Angeles, who bid $.115 per yard for 2,000,000 cubic yards material to be removed, was only bid received by City Purchasing Agent, Los Angeles, for fill at Cabrillo Beach, under Specification 1391.

Pennsylvania Notes

BY T. H. BARRETT

Frank Dunlevy is operating the Bucyrus 50-B Diesel dragline for A. E. Dick at Heckschersville, Pennsylvania.

Seeds and Durham of Germantown were the successful bidders on the Manayunk Bridge of the Reading Railroad to cross the Schuylkill River. Whiting & Turner Co. of Baltimore was the second lowest bidder.

According to an annual report to Congress by Major General Edgar Jadwin, chief of engineers of the Army, the Nation's seacoast and inland harbors and the waterways and rivers will require $65,477,365 during the year beginning next July 1 to keep them in shape to transport the vast volume of traffic which last year amounted to $23,946,000,000 in commerce and passengers numbering 937,100,734. His recommendations, by districts, include the following affecting the Philadelphia area:

Delaware River, between Philadelphia and Trenton, $826,000 (principally for dredging between Roebling and Trenton); Delaware River, Philadelphia, to the sea, $2,600,000 (including completing Edgemoor Dike, $500,000, dredging between Chester and Marcus Hook, $500,000 and operation and care of dredges, etc., $1,600,000); ice harbor at Marcus Hook, $5000.

Wilmington, Delaware District: Cooper River, New Jersey, $10,000; Raccoon Creek, New Jersey, $7500; Oldmans Creek, New Jersey, $7500; Alloway Creek, New Jersey, $5000; Cohansey River, New Jersey, $7500; Absecon Creek, New Jersey, $5000; Tuckerton Creek, New Jersey, $5000; Wilmington Harbor, $200,000; St. Jones River, Delaware, $25,000; Mispillion River, Delaware, $7500; Broadkill River, Delaware, $5000; inland waterway, Rehoboth Bay to Delaware Bay, $5000.

Pittsburgh District: Monongahela River, $293,000 (including Lock No. 1, $275,000 and No. 6, $18,000); Allegheny River, $5000; Allegheny River, construction of locks and dams, $1,500,000 (including Lock No. 6, $1,388,000 and No. 7, $112,000).

Leonard Hughes, son of Griff Hughes of the Reading Coal & Iron Co., is operating a Marion 60 for the Rhoads Contracting Company near Mt. Carmel, Pennsylvania.

W. J. Gilbert of Hazelton has installed caterpillars on one of his Bucyrus 70-C's and has moved it into his Harwood stripping.

Railroad Donates Community Christmas Tree

The Philadelphia and Reading Coal and Iron Company donated a Christmas tree to the people of Pottsville and a site in front of its storehouse for the celebration.

On Christmas eve the depot gates of both the Pennsylvania and Reading Railroads were lowered and the entire square given over to the people for the Christmas services.

Jersey to Build 2000 Miles of Road in 12 Years

State road building must be hastened to handle the great influx of traffic which will follow the opening of the Hudson vehicular tunnels and new bridges now being erected, Edmund B. Loughran of Jersey City said in an address before the tenth annual convention of the New Jersey Association of Real Estate Boards. Mr. Loughran is a member of the New Jersey State Highway Commission.

According to present plans of the Highway Commission, he related, 2,000 miles of road will be built in the next twelve years.

The Secretaries Association, a body subordinate to the Real Estate Board Association, elected the following officers: J. Leroy Borglund, Atlantic City, president; Miss Mary Van Deman, Maplewood, vice-president; Charles F. Holmes, Montclair, treasurer, and William Evans, Wildwood, secretary.

J. Robert Bazley of Pottsville has been awarded another section of the coal stripping at Bast owned by the Philadelphia and Reading Coal and Iron Company. He has averaged between 20,000 and 25,000 yards per month since the resumption of operations last February.

J. W. Schreinen of Nanticoke is using two small steam shovels to load culm back into the pan conveyor furnishing material to the new Lattimer Wing of Pardee Brothers, Inc.

Charlie Mochamer of the Rhoades Contracting Co., Ashland, Pennsylvania, was not as successful hunting this season. He missed four out of five when shooting woodcock.

Heavy Duty

TURBOTUBE — made only by Modine — has established an unmatched record for cooling efficiency as applied to engineering units of heavy duty type.

Combined with the advantages of high-cooling capacity are extended limits in strength, light weight, and free, unrestricted water circulation.

These qualities are so outstanding that leading producers of heavy duty machinery adopted Turbotube as indispensable to the efficiency of their product.

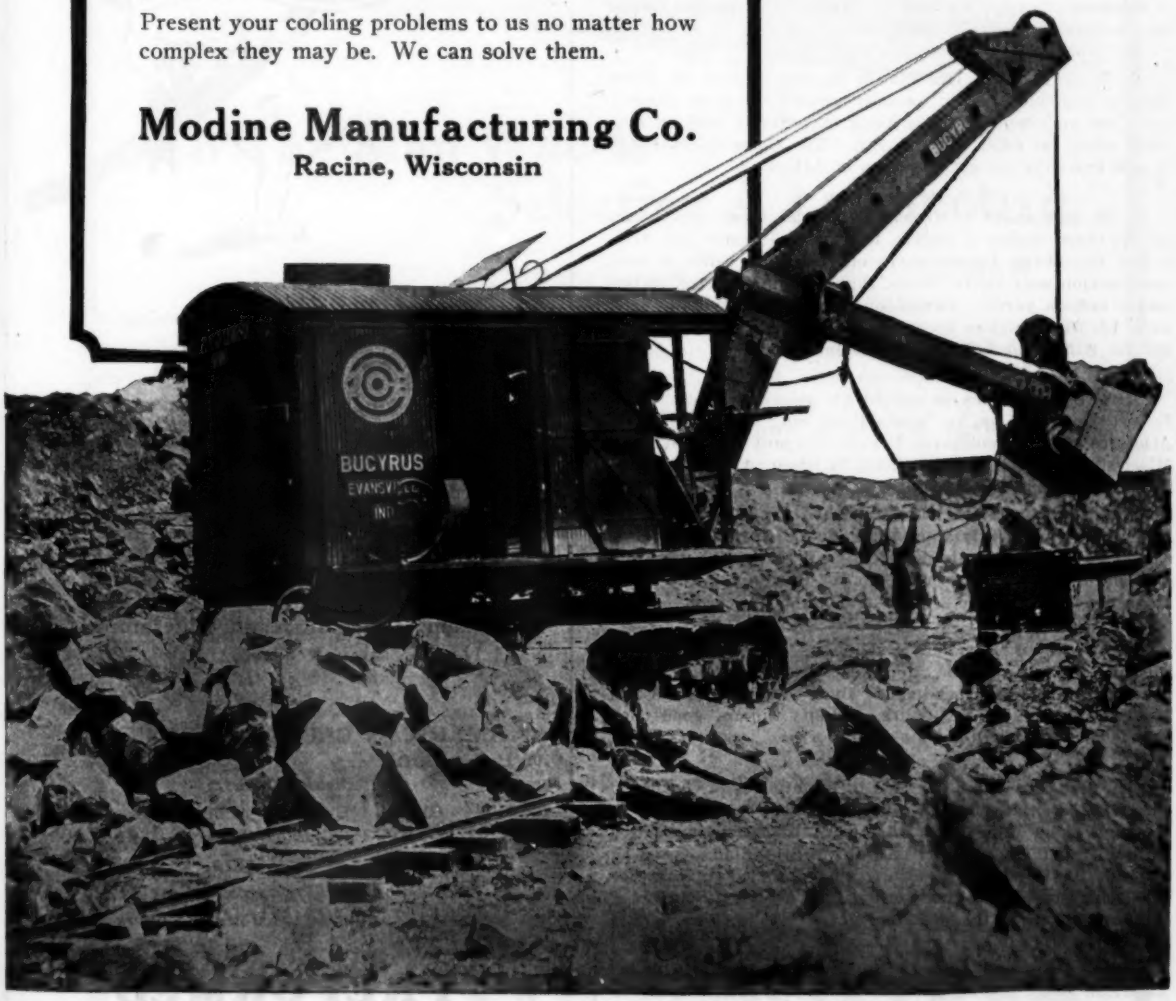
Present your cooling problems to us no matter how complex they may be. We can solve them.

Modine Manufacturing Co.

Racine, Wisconsin

1 to 1,000 H. P. any type — Tubular or Cellular (Spirex) Sectional — Conventional Cast — Sheet metal, or if preferred only cores or sections.

Turbotube is standard equipment in the heavy-duty machines of the Bucyrus Co.



MODINE RADIATORS

In writing to Modine Manufacturing Co. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

A. E. Dish of Hazleton has a new Bucyrus 50-B Diesel dragline working at Heckscherville casting clay and gravel.

Southern Notes

BY G. A. CARLSON

The National Crushed Stone Association held their New Orleans sectional meeting Thursday, December 2nd, at the St. Charles Hotel. Mr. I. L. Lyons, Jr., President of the Southern Mineral Company, presided. Messrs. Graves, Goldbeck and Boyd spoke in behalf of the National organization. W. L. Sparburg of Syracuse, New York, was with the official party, as was Mr. Rockwood, General Manager-Editor of "Rock Products." Mr. Sparburg is one of the oldest quarry men in New York State. His company uses two Bucyrus 78-C's on cats along with some older Marion equipment. Mr. W. F. Wise, President of the Southwestern Crushed Stone Association, a branch of the National, explained the objects of having a separate organization in the Southwest — however, co-operating with the Washington officials regarding matters of general importance.

R. H. ("Reeve") Hutchinson is now located at Baton Rouge, Louisiana. His specially rebuilt Bucyrus Class-24 using an Anderson Diesel is doing exceedingly well on some work about 40 miles out of town. The Class-24 oil-electric is still knocking out estimates up in Arkansas.

C. H. Edmunson of Greenville, Texas, beat out Trinity Farms Construction of Dallas, Kenyon of Houston and Johnson of Texarkana, besides seven others, on ten miles of canal construction near Paris, Texas, that will run between 980,000 and a million yards. Edmunson bid 9.9c and will probably move his 3T Monighan up on the work after he completes his sub for Gifford at Lake Charles, Louisiana.

Mr. Elzy continues to uphold his record as the "world's fastest" operator as he "loads them out" with one of the Atlantics of the Brookhaven Gravel Company at Brookhaven, Mississippi. Mr. Maddux, general manager, will stack Elzy's record against them all.

There will be lots of shooting when the Fort Worth and Denver let the recently approved Panhandle extension. From Cap Rock to Estelline is practically all rock; and there will be some heavy cuts, especially if the Burlington System decides not to tunnel in a section about 35 miles out of Cap Rock.

Mr. Crove of Douglass, Buchanan & Crove has moved to Shreveport, Louisiana, to take charge following the untimely death of Mr. Buchanan. "Buch" was one of the best-liked contractors of the South, and his radiant good cheer is being missed in all sections.

The first caterpillar dragline to go into Texas, a Bucyrus Class-14, has been rebuilt by Vilbig Bros., of Dallas, and they are now using it on a gravel deposit of theirs just out of Dallas. Col. Frank Robertson and "Bill" Callahan used the machine just in the lower Rio Grande Valley. C. N. Ballentine, Southern Sales Manager for Bucyrus, who then was an erector, helped set the machine up.

Trinity Portland Cement of Houston have installed a new American electric clamshell for unloading their shell. Mr. Bartholomew, general superintendent of the Dallas and Fort Worth plants, also has the new Houston mill under his wing. The Houston plant is the last word in cement mills.

Mr. J. W. Frain of the Jackson Machinery Company of Jackson, Mississippi, reports a good deal of activity in his section. Mr. Frain, formerly an erector and representative of Bucyrus Company, is engaged in the second-hand machinery business in that city.

Now — while the year is young — specify Tru-Lay Brand Preformed Wire Rope for use wherever severe service conditions exist. Then watch it establish new records for longer life and less expensive lay-ups for replacements. Note also how much easier it is to handle and how it affords an added factor of safety.

Know the facts — write today for sample and interesting literature. No obligation.

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PREFORMED WIRE ROPE

Trade **TRU-LAY** Mark

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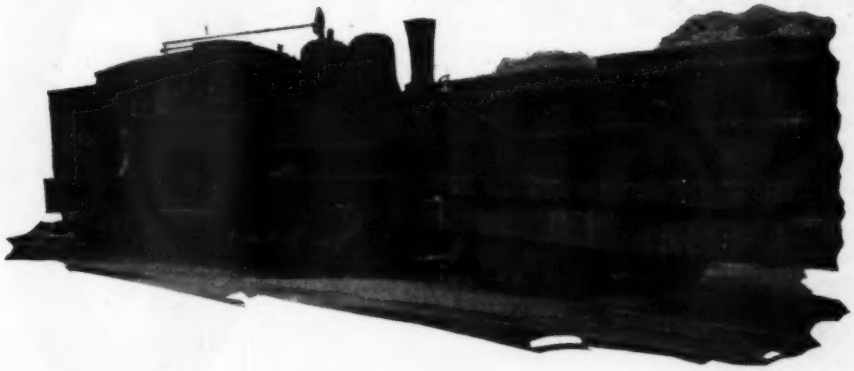

To The Man Who Is Selecting A Locomotive

THE purchase of a Shay Geared Locomotive is advantageous in two important ways:

The Shay Industrial Catalog will tell you what Shays are doing under conditions similar to yours. Write for a copy.

First: Dependable, low-cost haulage is definitely assured, for the Shay will operate steadily and surely, with greatest economy in operating cost maintenance, no matter how severe the working conditions.

Second: If the temporary character of the hauling job or other factors make it necessary to dispose of a Shay, the resale value of a Shay will be found unusually high. A company recently sold their 22-year old Shay "at a very attractive price," writes their superintendent. "A Shay seems to have a far greater resale value than any other geared engine made."

Send for a copy of the Shay catalog.

LIMA LOCOMOTIVE WORKS
Incorporated
Lima, Ohio — 17 East 42nd St., New York

LIMA *Shay Geared* **LOCOMOTIVES**

In writing to Lima Locomotive Works, Inc. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

The North American Company, Inc., of Shreveport, Louisiana, have completed four miles of track into their gravel deposit at Castor and are now beginning to fill their orders. Henry McFarland superintended the operations of the Bucyrus 41-B dragline as it made the many cuts and the fill across Black Lake. Fordyce Kimbell is vice-president and general manager of this organization, with Geo. Wetherbee of oil fame as president.

Mr. L. D. Crawford of Callahan and Crawford spent a good share of the fall at the Monighan Works in Chicago overseeing the construction of his specially built 6 C. T. dragline. Mr. Crawford had the machine made to his own design, a Diesel-electric, with individual motors for every power requirement.

Mr. H. H. Holloway of the Monroe Sand and Gravel Company of Monroe, Louisiana, reports that they are getting the Class-14 Bucyrus in shape for a heavy spring campaign.

McGeorge of Pine Bluff, Arkansas, was awarded the Missouri Pacific Railroad work near Hot Springs and will soon has his Eries on the job.

Clements and Braswell of Minden, Louisiana, are all praise for the little Bucyrus 20-B dragline that is giving them all the gravel they can contract for.

Smith Bros. of Dallas, Texas, were the only bidder on the huge drain and irrigation project at Cotulla, Texas. A $70-an-acre debt scared the other boys away, especially when Nagle, Witt, Rollins, and Gilchrist, engineers for the project, wanted the contractors to take a good share of the $7,000,000 in bonds.

The Robinson Bros. are now at Hosston, Louisiana, with their Bucyrus 50-B Diesel dragline. Their fuel and operating costs are almost ridiculously low, but it is attributed to the excellent operation and supervision of the Robinsons who are always on the job, besides the Atlas-Bucyrus Diesel economy.

M. C. Sheble is general manager of the Texas Quarry Company, contractors for loading rock asphalt. This company is a subsidiary of the McAlester Fuel interests. They have a Bucyrus 70-C at Cline, Texas, loading out rock asphalt.

Mr. M. C. Crawford is looking after the construction of the Guadlupe River Dam work out of San Antonio. Sumner-Sollitt are the general contractors with Callahan and Crawford subbing the excavation. A 3-T Monighan is at work on the project.

"Jack" Sikes, Marion erector is in Mission, Texas, with a No. 7 friction shovel for Glenn Abney. W. T. Montgomery has a Bucyrus Class-9½ on a nearby lease with A. F. Dingel superintending the operations. The Missouri Pacific and Southern Pacific extensions are using all the gravel they can get from their somewhat cemented deposits. Gravel is almost as scarce as gold along the Rio Grande.

J. P. Herbert has subbed 100,000 yards at Opelausas, Louisiana, prior to setting up his Bucyrus Class-9½ again.

W. F. Wise, president of the Stringtown Crushed Rock Company and the Texas Trap Rock Corporation of San Antonio, is president of the Southwestern Crushed Stone Association. R. J. Hank acts in the capacity of Secretary, Engineer-Manager for the association with offices in the Littlefield Building in Austin, Texas. To date only Texas stone producers have been asked into the association, but the plan is to have the representative producers of Texas, Oklahoma, Arkansas, and Louisiana closely united by this local division of the National Crushed Stone Association.

Doubting Thomas

Every day we receive inquiries and answer questions from Missourians who have never seen and therefore doubt that Asbesgraphite ends all friction troubles.

Asbesgraphite, a self-lubricating non-scoring asbestos friction material, has proved its claims for longer life, trouble-free service and ability to withstand heat, cold or moisture.

Operating with a soft, cushion-like effect on Power and Electric Shovels, Dragline Excavators, Dredges, Locomotive Cranes, Hoists, concrete paving Machinery, Auto Trucks, etc., it keeps the friction surface in a smooth, highly-polished condition.

Asbesgraphite brake and friction blocks COST LESS, because they outlast any other type of block or lining by 2, 3, even 5 times.

It takes a Thomas to convince a Thomas. Write us for proof.

"Ektag", the Gatke Folded and Compressed Asbestos Brake Lining, is carried in stock for immediate shipment.

We manufacture brake and friction blocks for all makes of steam shovels, locomotive cranes, dredges, draglines and hoisting equipment, including Lidgerwood, Mundy, Mead-Morrison, Flory, National, Orr and Sembower, Clyde, American, Thomas, Lambert and others.

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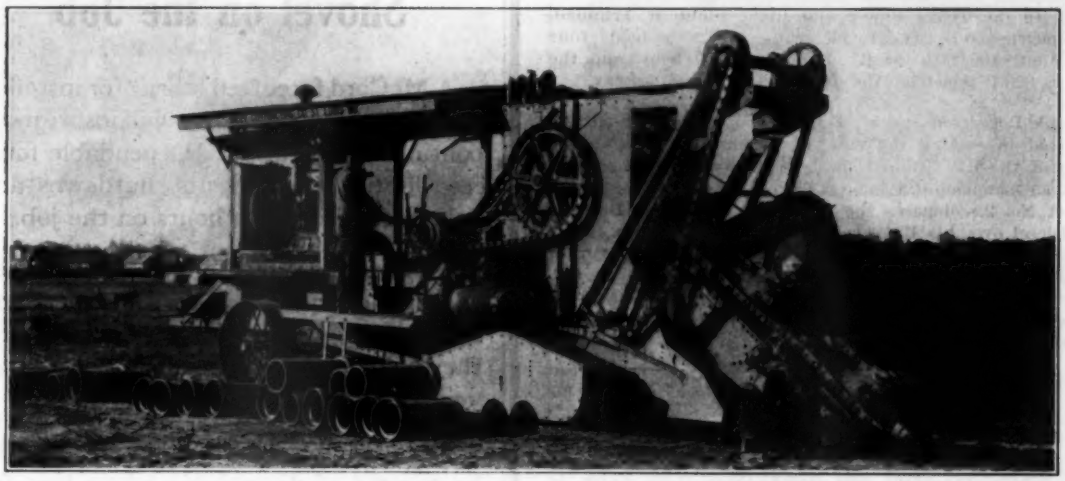
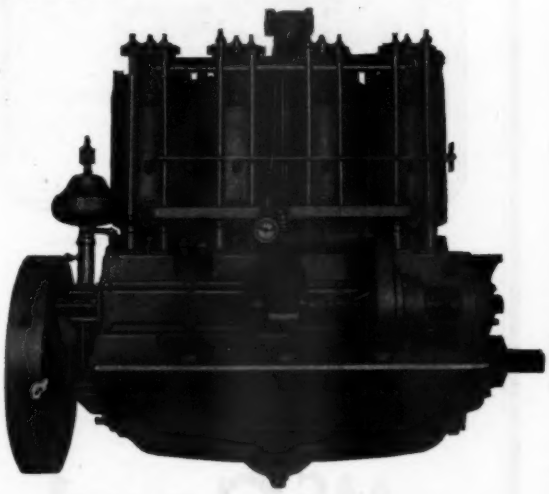
ASBESGRAPHITE
ASBESTOS COMPOSITION

TWIN CITY ENGINES



Parsons Model 40 Ditcher operating in St. Louis, Mo., for the Riley Contracting Co. Equipped with 7¼ x 9 Twin City Motor.

EVER-DEPENDABLE — powerful — long-lived — Twin City Engines have *proved* their stamina for many years, in many different kinds of work, under severe working conditions and on long continuous runs under full loads. They will make good on *your* equipment. Size 35 to 140 h. p.



See TWIN CITY Engines at the Road Show

Other TWIN CITY users include Austin Machinery Co., Baldwin Locomotive Works, Buckeye Traction Ditcher Co., Bucyrus Co., Cement Gun Contracting Co., Northwest Engineering Co., Pennsylvania Pump and Compressor Co., Star Drilling Machine Co., Washington Iron Works, Willamette Iron & Steel Works, etc.

Write for Literature.

Minneapolis Steel & Machinery Company, Minneapolis, Minn.

Heavy Duty Engine Manufacturers Since 1903

"BUILT TO DO THE WORK"

In writing to Minneapolis Steel & Machinery Company please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

Mr. W. D. Puterbaugh is now ready to royally entertain his visitors at the Malakoff Fuel Company's pit and mines at Malakoff, Texas. Atop the fine new general office building, Mr. Puterbaugh has laid out his quarters while in Malakoff, as well as accommodations for guests. Mr. Puterbaugh is Vice-President and General Manager, with Bailey, Doceman and Ballard assisting in office and field work of keeping coal moving to the Texas Power and Light Plant at Trinidad. The Bucyrus 50-B 2 C. Y. electric consistently loads four of the new 100,000 capacity dump cars per hour, and the Bucyrus 320-B is getting the overburden out of the way.

Frank Robertson and W. E. Anderson are on committees interested in solving the many questions of diverting the waters of the Rio Grande. In between committee meetings, Frank as manager of Cameron County Water Improvement District No. 2, compares the direct savings of his Bucyrus 20-B Diesel over his Bucyrus 20-B gas dragline. Mr. Smith is his foreman. King is one of his old operators that jumped to the Diesel and wants to stay with it. A. W. Arthur, manager of the La Feria, Texas, district, is another enthusiastic booster for Diesel. Messrs. Yeary and Hank are operating his Bucyrus 20-B dragline.

Southern States Notes

BY W. W. WHORLEY

S. A. Lacy is grading a portion of the Jackson & Eastern Railway with his Bucyrus 30-B Diesel dragline near Sebastopol, Mississippi. This new line extends from Union to Jackson, Mississippi, and will give the G. M. & N. R. R. an entry into Jackson.

We had a pleasant visit recently with J. B. Turner of the J. B. Turner Construction Company. Mr. Turner reports that both his Bucyrus 20-B and 31-B shovels are busy on a fine piece of grading near Clayton, Alabama, for the State Highway Department.

J. D. Morris and F. L. Busby are stripping coal with a Bucyrus 50-B shovel near Fremont, Tennessee.

L. B. Green is operating a Marion 37 shovel for the North American Clay Company at Bath, South Carolina.

The New Orleans divisional meeting of the National Crushed Stone Association was held at the St. Charles Hotel, New Orleans, Louisiana, with Mr. I. L. Lyons of the Southern Mineral Company presiding. A large number of members were present in addition to the following officers of the National Association, Mr. Graves, President, Mr. Goldbeck, Director of Engineering and Research, and Mr. J. R. Boyd, Secretary.

Preliminary work has been started on a large hydro-electric power plant on the Pigeon River above Newport, Tennessee, by the Carolina Light & Power Company. It is estimated that this project will cost $12,000,000 and will require from two to three years for completion. The dam will be of reinforced concrete 175 feet high, giving a head of 150 feet for the water and developing 80,000 h.p. when operating at capacity. Contract was awarded to Peters and Holts of Knoxville, Tennessee, for building the 5 miles of construction railroad necessary to reach the dam site.

The Paris Texas Drainage District No. 2 recently awarded 1,000,000 cubic yards of main ditch and 130,000 cubic yards of laterals to M. H. Edmondson of Greenville, Texas.

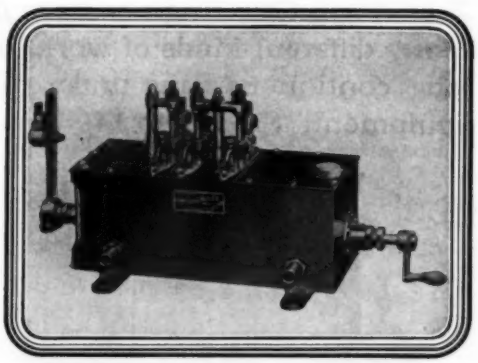
Considerable interest has been aroused among Texas contractors by the plans of the Fort Worth & Denver Railroad to extend their lines in the Panhandle region. This work will include about 200 miles of new construction, a part of which will be heavy grading. A number of team outfits are already at work, and it is expected that heavy grading equipment will be placed as soon as bids are taken for the heavy sections.

A McCord Force Feed Lubricator Will Keep Your Shovel on the Job

A McCord force feed lubricator installed on your steam shovel now will insure more continuous operation. Dependable force feed lubrication prevents shutdowns and delays, it gives more hours on the job.

McCord force feed lubricators are used as standard equipment by the largest and best-known steam shovel builders and they will be installed on any shovel at your request.

Put a McCord lubricator on now and be assured of dependable lubrication for the life of your shovel.



McCord Class B. A. Force Feed Lubricator

McCord Radiator & Mfg. Co.
Detroit, Michigan

McCord
force feed
Lubricators

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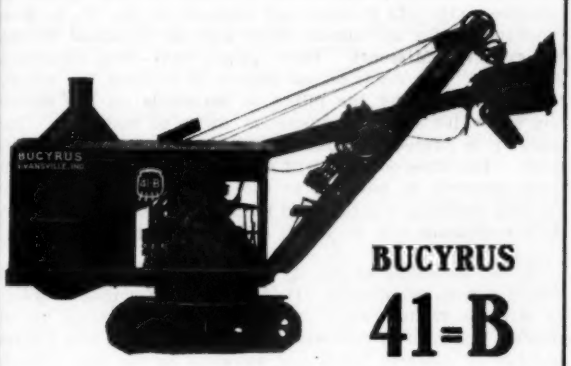


BUCYRUS
41-B

A NEW ONE
and
A REAL ONE

Setting a new standard in engineering and performance.

AS USUAL

Nothing less than the very best in every detail.

REMEMBER

A machine is no better than its boiler.

CONSEQUENTLY

JOHNSTON BROS., Inc.
Specializing in Boilers for Contractors' Equipment
FERRYSBURG, MICHIGAN

Increase Your Profits

By Operating a Night Shift

You can easily install a lighting plant of the latest design on your shovel or dragline—no electrician is required.

Simple to operate—
no storage batteries.

SPECIAL!

We have a small independent plant for lighting camps, etc. Press a button or turn on any lamp and generator starts immediately. Stops automatically when lights are turned off.

BUCYRUS COMPANY
SPECIALTY DEPARTMENT
SOUTH MILWAUKEE, WIS., U. S. A.

SHOTS FROM THE FIRING LINE — Continued

St. Louis Items

BY A. B. KOENIG

We wish all our readers a Happy and Prosperous 1927.

J. O. Patteson & Co. were awarded contract for paving Adams Street from Tenth to Twenty-first Streets, Springfield, Illinois.

L. L. Hardeman of the Missouri Valley Bridge & Iron Co., Leavenworth, Kansas, was in the city. This firm has contract for substructure on the highway bridge across the Mississippi River at Louisiana, Missouri. Included in the substructure job are five piers in the river, this being one of the narrowest places in the Mississippi. There are two abutments at either end of the bridge proper and twelve pedestals for the sloping approach on the Illinois side.

W. P. McGeorge & Co., Pine Bluff, Arkansas, were awarded contract by the Missouri Pacific Railroad for a spur out of Hot Springs, Arkansas. They have started work and expect to finish by spring. W. Albright is in charge.

C. N. Bass, State Highway Commission of Tennessee, will recommend to the next Legislature the appropriation of funds for construction of four bridges over the Tennessee River at Loudon, Trotters Landing, Savanna and Perryville, Tennessee.

McEachin & McEachin, Little Rock, Arkansas, were awarded sewer contract by the Board of Commissioners of the Little Rock Highland Road Improvement District No. 24 and Sewer District No. 25.

S. J. Riley, formerly of the Riley & Bailey Construction Co., was fatally injured when he fell from a bridge at Columbus, Mississippi. The body was sent to Poplar Bluff, Missouri, for interment.

Something new for Kansas City, a central concrete mixing plant, selling ready-mixed concrete for all classes of concrete work, will be built and operated by the W. A. Ross Construction Co. at Summit Street and the Terminal Tracks, Kansas City, Missouri. These plants have been successful elsewhere. For ready-mixed cement is claimed the advantage of eliminating the piling of materials on the streets and sidewalks and the consequent waste of materials. The concrete is offered both for building construction and street work. The Ross concern will erect several buildings on the large property in addition to the mixer. Included will be an office building, a garage and machine shops. The extensive Ross equipment will be stored and serviced there.

J. W. McMurry of the J. W. McMurry Contracting Co. returned from Mississippi. He is spending a couple of weeks at Mineral Wells, Texas. This firm has a contract for 90 trestles, six concrete foundations for steel bridges and a large number of concrete boxes and subways on the new Florida extension of the Frisco Railroad through Mississippi and Alabama.

Illinois now has 5,966.82 miles of completed hard roads in the state's highway systems, according to reports received by the Springfield Automobile Club from the State Highway Department. In addition there are 1,947.22 miles of grading completed roads that will be paved next year, and 1,759 bridges have been built. Now under contract for paving in 1927 are 256.15 miles, as well as 39.38 miles of grading and 45 bridges. In the six years from January 1, 1921 to December 1, 1926, there has been 4,760.95 miles of paving laid, 1,246.83 miles of grading work completed and 1,016 bridges constructed. About 300 miles of paving remains to be completed under the $60,000,000 bond issue.

The Wisconsin Bridge & Iron Co. were awarded contract for superstructure of the new highway bridge across the Mississippi River at Louisiana, Missouri.

PROVED *by Users*

IMPROVED *by Buckeye*

No Buckeye equipment is ever so perfect that Buckeye does not constantly strive to improve it. The Buckeye Utility Backfiller of 1927 shows the results. Even more simple, even more rugged and compact than before, it now has an even greater stamina and range of usefulness.

Buckeye Model "O" Utility Backfiller

With full circle swing and adjustable-length boom

Primarily a backfiller, it may also be used as a dragline. It is a perfected light crane. It pulls piling, handles pipe, batch boxes, stone and steel. Equipped with a clamshell, it handles all loose material and helps you clean up after excavation jobs.

Convenient one-man control, and a boom adjustable from 21 feet to 33 feet, help adapt this Buckeye to this wide variety of work.

Write for detailed information

The Buckeye Traction Ditcher Co.

Manufacturers of Trench Excavators (both Wheel and Chain-and-Bucket Types), Pipe-Line Trench Excavators, Tile and Open Ditchers, Backfillers, Pipe Screwing Machines, Curb Diggers and Clay Diggers

Findlay, Ohio

There's a Buckeye Sales and Service Office Near You

BUILDERS OF TRENCH EXCAVATORS FOR OVER 30 YEARS

In writing to The Buckeye Traction Ditcher Co. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

Thomas Jefferson Galley and L. C. Gunter of T. J. Galley & Co. began preliminary work December 1st on the 2½-mile earth fill for the new Harahan viaduct at West Memphis, Arkansas.

Cook & Stucker were awarded 69,389 square yards of paving on Federal Aid Project 315-C in Johnson County, Kansas. Their bid was $265,374.00.

A. L. Cook of Ottawa, Kansas, was awarded 7 miles of grading on Federal Aid Project 273-B in Franklin County, Kansas.

Chas. Chester has his team outfit at work building a levee at Salt Creek in Illinois for the Chicago & Northwestern Railroad.

The Missouri Portland Cement Co. purchased 416 acres of land about 8 miles west of Batesville, Arkansas, and will construct a new plant there as soon as arrangements can be made to furnish sufficient electric current.

E. C. Johnson was awarded contract for grading and paving connected with the new highway bridge across the Mississippi River at Louisiana, Missouri.

List Construction Co. were awarded small steam shovel job by the Missouri Pacific Railroad near Texarkana.

M. L. Windham has two good shovel outfits idle at Centralia, Illinois, that he would like to place on work immediately.

Emil Olson writes from Albert Lea, Minnesota, that he has a dozen trucks idle and wants a job for them in the South.

The John Hill Construction Co. were awarded contract for the new Missouri Pacific office building to be erected in St. Louis.

N. Lee Fowler of Maloy & Fowler, 416 Globe Building, St. Paul, Minnesota, was with us a couple of days, looking for a job suitable for a small shovel outfit they have idle near Chicago.

E. E. Hudson is ditching for the Frisco Railroad in Southern Missouri.

Allhands & Davis have contract for bank widening and ditching on Frisco Railroad in Kansas and Arkansas. S. E. Price is looking after this.

H. E. Kingore is looking after Cook & Waddell's bank widening work on the Missouri, Kansas & Texas Railroad in Missouri. He has the work well covered with stationmen.

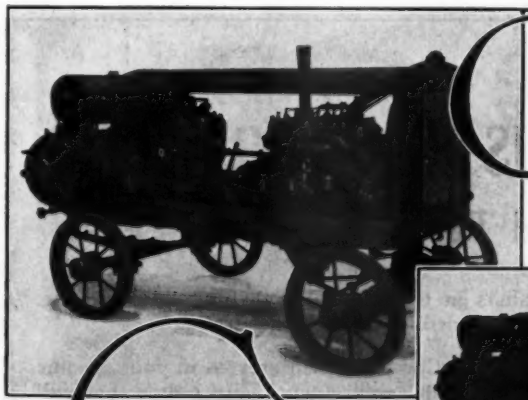
John Kenney has a team outfit at work on the new Pennsylvania Railroad cut-off east of East St. Louis. He also has an outfit busy on state highway and a Missouri Pacific spur near Pinckneyville, Illinois.

Ross, Wogan & Co., who are building the Florida extension of the Frisco Railroad through Mississippi and Alabama, opened an office at Columbus, Mississippi, with Morris Wogan in charge. They have some nice work on this line to sublet.

Cameron, Joyce & Co. have about completed their big grading job in the southwestern part of the city.

Emil Christensen, Brookings, South Dakota, has three trucks idle that he wants to place on gravel hauling.

The Missouri Pacific are receiving bids for approximately 30 miles of new double-track work, between Labadie and Washington, Missouri, Isbell and Osage, Missouri, mile post 78 and Gasconade, Missouri. C. S. Samples, construction engineer of this company, took contractors over the work in a special train. He will announce names of successful bidders in next issue.



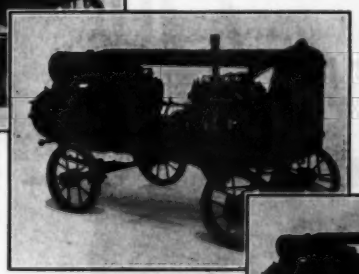
COMPRESSORS

"SCHRAMM" Multi-Cylinder Engine-Driven Air Compressors

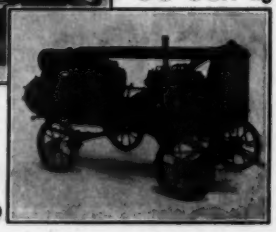
Built in four sizes, all mounted so that perfect alignment of engine and compressor is always maintained. The large capacity "SCHRAMM" Compressors and the heavy-duty type Buda Engine are connected by a very heavy flexible clutch. This permits the starting of engine separate from compressor—a very important feature.

240 CU. FT.

180 CU. FT.



60 CU. FT.



120 CU. FT.

Also the "SCHRAMM" Slow-Down Governor, which automatically cuts the engine speed to a minimum as soon as the air compressor unloads. Saves much wear and fuel.

SCHRAMM, Inc., Manufacturers
West Chester, Penna.
Offices and Representatives in All Principal Cities.

SCHRAMM

In writing to Schramm, Inc. please use post card bound in the center of this number.

SHOTS FROM THE FIRING LINE — Continued

C. R. Utter has a team outfit at work on the Missouri, Kansas & Texas Railroad widening banks in Missouri.

Carter, Carter & Braden started on their grade and drain work between West Paducah and the Ballard County line, Kentucky. About four months will be required to complete the grade and drain work according to engineer of the district highway office.

Contractors when in want of work or labor for their outfits write, wire or phone Koenig Labor Agencies, 612 Walnut Street, St. Louis, Missouri, or 501 Delaware Street, Kansas City, Missouri.

Twin City District

BY J. C. YETTER

Nelson, Mullen & Nelson were low bidders on several large grading jobs at the November 30th state letting held in St. Paul.

The Geo. J. Grant Construction Company, St. Paul, Minnesota, have recently placed a Bucyrus 20-B Diesel shovel on their grading work at Chatfield, Minnesota.

Whitney Bros., Duluth, Minnesota, were low bidders on the rock removal project which the city of Duluth recently asked bids on. Their bid of approximately $700,000 was considerably over the engineer's estimate. The award is pending.

M. W. Barnard & Sons, Minneapolis, were low on some grading work on the November 30th letting.

Geo. J. Grant Construction Company, St. Paul, were low bidders on one of the projects offered at the November 30th letting.

T. J. Frederick Company have completed their grading and gravel work in Wisconsin.

M. J. Nolan Company was low bidder on two paving projects at the November 30th letting.

Canada

Montreal and Vicinity

BY J. M. WARD

The Atlas Construction Company, contractors for the first section of the Cote St. Paul Sewer in Montreal, have sublet part of the excavating and backfilling to Kendall Bros. of Montreal, who will use their Erie Shovel and a fleet of trucks.

Avoid expensive Shutdowns
by using
Palmer Molded Brake Blocks

Self-lubricating, long wearing, unaffected by water, oil, dirt or temperature. Made of asbestos composition, impregnated with special friction-gripping compound, compressed and cured under enormous hydraulic pressure. Used by experienced operators.

PALMER ASBESTOS & RUBBER CORP.
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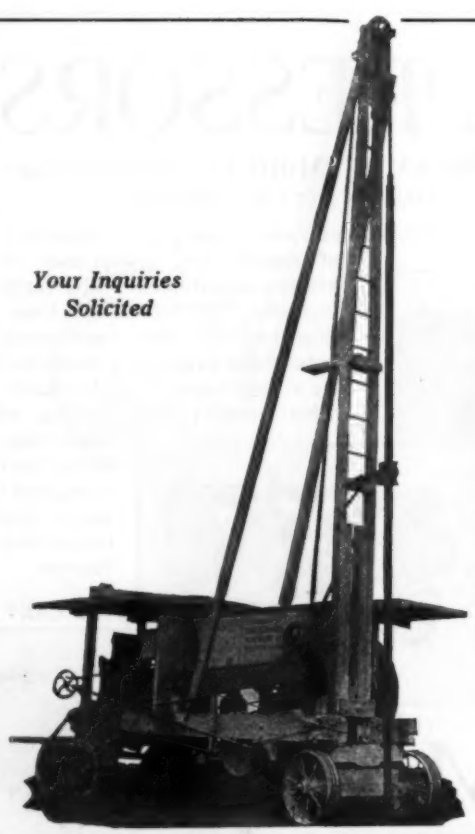

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LOOMIS "CLIPPER" DRILL
Suited To Your Exact Needs

We are specialists in the blast hole drilling line. Let us help you solve your drilling problems.

The Loomis Machine Company is interested in your specific work and can meet your requirements with a drill that will give you best results either in hard rock or soft rock, in Tractor or Non-tractor, Crawler or round wheels, light or heavy tools, extra long or short stroke. The new type "Clipper" blast hole drill adapted to your specific needs will prove its worth, for it is simple, rugged, serviceable and dependable.

Known amongst users as the "Drill that Drills." Works in all kinds of weather, has long life and requires few renewals. These are a few of the reasons it predominates in the blast hole field. Write us for information.

The Loomis Machine Company
Established 1842
K STREET TIFFIN, OHIO

SHOTS FROM THE FIRING LINE — Continued

We had a visit the other day from Tom Gorman of Gorman and Peckham who has been working for the Aluminum Co. at Ship-Shaw, Province of Quebec. Operations have slackened to a considerable degree in that district.

The Bathurst Company of Bathurst, New Brunswick, have just about completed the plans for their new power development, and it is expected they will seek prices from contractors at an early date.

It is pretty well understood that the developments of the Carillon Water Power, which has been on the tapis for several years, will be gone ahead with in the Spring.

The Quebec Department of Highways have completed their busy season and have a program partially mapped out for next year's operations. Most of the new work will be around the Gaspe District, as well as quite a big stretch in Northern Quebec.

The Quebec Department of Highways laid a considerable number of miles of new road this year with amiesite which was found to make a very satisfactory road for this province. About 60 miles were laid this year.

The Shawinigan Engineering Co. are steadily at work on their transmission line from Lake St. John to Quebec and expect to have same completed by the middle of next summer. The road which they constructed in order to get in their supplies will be taken over by the Quebec Government and form part of the highway from Quebec to Chicoutimi. It will require considerable improvement and maintenance, but will be practically a straight line.

Another visitor to Montreal recently was H. F. McLean, Vice-President of the Dominion Construction Co., who have the contract for the Grand Falls power development. Mr. McLean states they had a very wet season but have made very good progress.

The Province of Nova Scotia and Province of New Brunswick have a considerable program of gravel roads laid out for next year.

The Canada Construction Co. and Currier & Seymour of Fredericton, New Brunswick, have contracts for getting out gravel for highway work.

Mr. M. H. McManus has just about completed his sewer job at St. Lambert.

The Mistassini Power and Paper Company are building a townsite on their new development — streets, sewers, water mains, etc. Good progress has been made on the pulp mill, and it is expected that the 32-mile railway line from St. Felicien will be built in the early spring.

Arvida, Province of Quebec, which is the new town belonging to the Aluminum Co. of Canada, presents quite a settled appearance. Streets, sidewalks, houses have been built into what was practically a wilderness.

The Grenville Crushed Rock Company have had a very busy season getting out ballast for the Canadian Pacific Railway.

Fraser-Brace & Company are busily engaged on work for the Canadian International Paper Company.

Alex Young of the Nelson River Construction Company has opened an office in Montreal, and we recently were favored with a visit from him as well as Barney Holden and John Jackson of the same company.

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SHOTS FROM THE FIRING LINE — Continued

Toronto and Vicinity

BY C. F. ENGLAND

Merlo, Merlo & Ray, Limited, Ford, Ontario, have been working in the late fall on concrete roads in the town of Riverside, Ontario. One of the additions to their plant was a new Barber-Greene loader.

Morand & Adair, Riverside, are making good progress on their large sewer contract for the town of Riverside, Ontario.

Geo. Mills & Son have a contract from the Atlas Construction Co. for excavation work in connection with the big culvert at Welland, Ontario. This work is on the New Welland Ship Canal, and the contractors are using a Class-14 Bucyrus dragline.

The majority of the road contractors in Ontario have had work the past summer. There has been quite a lot of concrete laid, as well as bituminous work and waterbound macadam. The extremely wet fall was not as good for operations as could have been wished for. However, most of the contractors were finished up on time or nearly so.

The Canadian National Railways are making progress with the fill in the east end of Toronto in the new viaduct scheme.

Vancouver and Vicinity

BY J. C. MOON

The City Council of Nanaimo, British Columbia, have approved a scheme for improving the water supply at a cost of $160,000. The projected work involves regrading and enlarging the present pipe line.

A three-year replacement program representing an expenditure of about $1,000,000 a year on the Pacific Great Eastern Railway will be presented at the forthcoming session of the Provincial Legislature; the first year's work will consist almost entirely of the renewal or replacement of wooden bridges.

Negotiations are under way that may result in the establishment at New Westminster, British Columbia, of a large sugar beet plant, and the question of a bounty will be conceded by the Provincial Government.

Announcement was made by Hon. T. D. Pattullo, Provincial Minister of Lands, that big developments leading to the establishment of a $30,000,000 pulp plant at Prince George, British Columbia, are expected to commence immediately following the culmination of a satisfactory agreement between the Government and the Eastern Canadian interests who are promoting the project.

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SHOTS FROM THE FIRING LINE — Continued

At the city elections held in Vancouver this week money by-laws to the amount of $2,000,000 were passed by the ratepayers. These cover a large amount of street and sewer construction, new schools and hospital extensions.

The Commission appointed by the Federal Government to hold an inquiry into the matter of the building of a bridge over the First Narrows entrance to Vancouver Harbor has held several sittings and has adjourned till December 15th. A good deal of evidence from shipping men and others, both in favor of and against the proposed bridge, has been submitted. The Commissioners are E. C. Brydone-Jack, C. C. Worsfold and Major W. G. Swan.

Winnipeg and Vicinity

BY D. V. REDDIN

Mr. S. C. Ells, Mines Branch, Department of Mines, Canada, who has been working in connection with oil sand deposits in Northern Alberta visited the South Milwaukee plant recently enroute to Ottawa, Ontario.

The Tomlinson Construction Company, Limited, are carrying on during the winter months the line revision work for the Canadian National Railways near Entrance, Alta. A gas shovel is being used on this work which should be finished by February 1st. George St. Louis is operating the machine. They are also excavating a drain near Hazelridge, Manitoba, with a gasoline dragline. Jim Gardner and George Walsh are operators on this work.

Carter-Halls Aldinger Co., Limited, Winnipeg, have completed the construction of dyke embankment on the Winnipeg River at Great Falls. A Bucyrus 60-C shovel was used in pit loading 6 and 12-yard dump cars. Sixty cars and two locomotives handled 90,000 cubic yards of clay and 12,000 cubic yards of rock (rip-rap). Average haul was eleven miles.

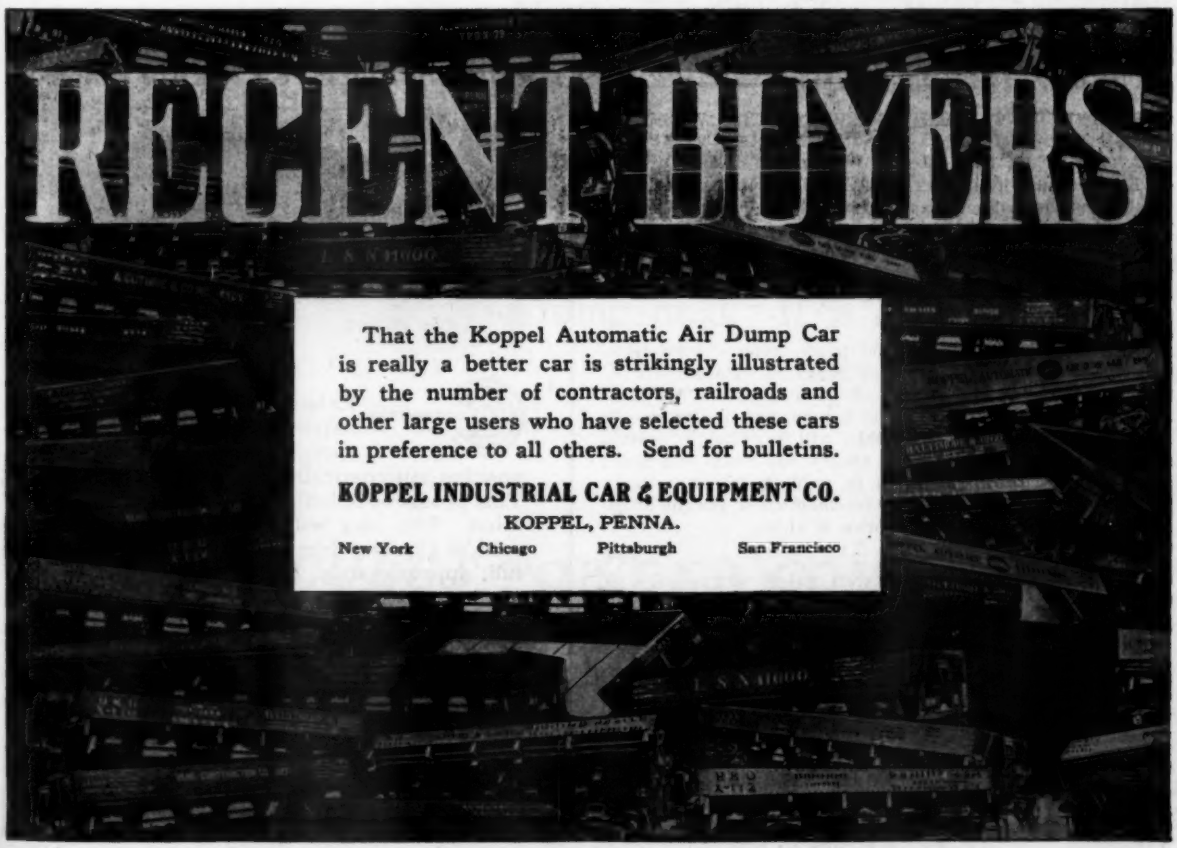
The City of Winnipeg have completed an extensive paving and sidewalk program during the year 1926. It is expected their 1927 work will exceed this year's program. A big majority of this work is done directly by City Engineer's Department, the material all being supplied from their own quarries and gravel pit. Concrete work is being handled from an up-to-date central mixing plant.

TRADE NOTES

A New Slackline Cableway Excavator

F. T. Crowe announces the development of a new slackline cableway excavator, upon which patent was issued November 10, 1925. It is claimed to be void of latches, trip lines, springs, gates, running blocks and chains, all of which require constant care, adjustment and renewal. According to the designer, it is impossible to dump it prematurely, regardless of how it is loaded; it dumps closer to the mast. if desired, than any excavator on the market; its dump is positive, clean and concentrated. A manufacturing and selling agency has not as yet been selected. Persons interested may secure working drawings and license from the patentee for local manufacture until a selling agency is secured.

The Explosives Department of E. I. du Pont de Nemours & Company has announced the appointment of Mr. J. W. McCoy as Assistant General Manager of the Department.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TRADE NOTES — Continued

He assumed the duties as of December 1st. For the past year he has been director of the Manufacturing Division of the Department. Mr. McCoy is widely known in the explosives manufacturing field.

Announcement was also made of the appointment of Mr. J. H. Wellford as Director of High Explosives Manufacture in charge of all high explosives works.

Mr. H. K. Babbitt has been named as Director of Special Products Manufacture in charge of the works at Pompton Lakes, New Jersey, and the box and pulp operations in Maine.

The Barber-Greene Company has opened a new office in Kansas City, Missouri, at 2045 Main Street. Mr. E. H. Cooper, District Manager of the Barber-Greene Company, will be in charge. The complete Barber-Greene line, including ditchers, loaders, portable conveyors and coal-handling equipment, will be handled through this new office.

BOOK REVIEWS

We shall be glad to review such books and catalogs as are sent us

Some Developments in the Electric Industry During 1926

In the General Electric Review for January 1927 will appear an article by John Liston of the General Electric Company. This complete story of the developments of the General Electric Company during the past year will include 38 sections and 145 photographs. Those who are interested in electrical developments might well write the *General Electric Company, Schenectady, New York*, for a copy of the General Electric Review.

ENGINEERING ACHIEVEMENTS OF THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY FOR THE YEAR 1926 — By H. W. Cope, Assistant Director of Engineering, 48 pages, 8½ x 11. This publication, profusely illustrated, describes new developments of the Westinghouse Electric and Manufacturing Company during last year. Copies will be available shortly and may be obtained by writing the *Westinghouse Electric and Manufacturing Company at East Pittsburgh, Pennsylvania.*

ARC WELDING — 6 x 9, 160 pages, replete with illustrations showing and describing many a welded piece of machinery or apparatus, many of them manufactured from standard shapes of steel. The book, published by the Lincoln Electric Company, Cleveland, Ohio, will be found to contain many an interesting example of electric arc welds both usual and unusual. Those interested in welding should write to the *Lincoln Electric Company, Cleveland, Ohio*, for the attention of *Mr. A. F. Davis*. The price is $1.50.

MODERN TELPHERAGE AND ROPE WAYS — 7 x 10, 56 pages and many full-page illustrations. This book, by Herbert Blyth, M. Inst. C. E., is very completely illustrated with both photographs of installations and line drawings. Its contents are divided into three groups, "Modern Telpherage," "Modern Ropeways" and "Modern Cableways." Included are such tables as one Showing Maximum Length of Trestle Legs for Given "H" Sections, Cost of Telpher Handling in Pence per Ton, Relation Between Capacity, Load, Speed and Size of Rope, etc. The price of the book is $7 and may be obtained from the publishers, *D. Van Nostrom and Company, Warren Street, New York.*

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The newly developed Hercules Special No. 3 has all the advantages of Special No. 1 and No. 2 with better fumes, and makes possible the reduction of costs underground to the same extent that Specials No. 1 and No. 2 lower costs in the open.

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At the left is a good view of the machine taking off the rise at the Fairmont Park Subdivision. At the right, looking over section that was filled in.

(Left) View looking north, showing the excavation work for the new theatre just as it was well started.

(Right) The construction work on the theatre being started after the excavation was finished.

Taking out the last few dipper loads with the Bucyrus 20-B at the corner of Van Buren and Mason Streets. Construction work was started while the machine was still in the hole.